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VOL.4.NO.1. APRIL 1967 PRICE 25c

GEELONG NATURALIST

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1970

Journal of the Geelong Field Naturalists Club

BURRAMYS.

ed at G.P.O., Melbourne, for transmission by post as a periodical HON. EDITOR: TREVOR PESCOTT

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

MEMBERSHIP

Membership of the G.F.N.C. is open to any person interested in Natural History. The 'Geelong Naturalist' is distributed free to all members, and the Club's reference and lending library is available.

Subscription Rates are:
(Due on 1st April)

	Per Annum
Adult Membership	$2-00
Joint Membership	$3-00
Junior Membership	50¢
Subscription to Magazine	$1-00

COVER PHOTOGRAPH

Burramys, a type of Pigmy possum photographed at the Fisheries and Wildlife Department by I. Cooper.

GEELONG
NATURALIST

EDITORIAL

Vol.4 No.1 April 1967.

Over the last few months, a number of acts of cruelty and vandalism to native fauna have been brought to light. At Portland, for example, came the instance of a rabbit trap set on the roof of a house to catch a possum that lived under the eaves. The trap worked, and the animal was left trapped on the roof where it would have died had not naturalists intervened.

At Kerang, a group of shooters were seen returning from a hunting trip beside Kangaroo Lake. Their bag? One Noisy Miner.

The list of this nature of offence of course is very long, and it seems to be endless - perhaps we can never prevent it entirely, and at times we tend to blame the Fisheries and Wildlife Department for their inefficiency in not suppressing it.

But it is impossible to police all these acts and we should look to the value we have in the very excellent Fisheries and Wildlife Department, rather than blame them for missing a few offences. After all, any one of us can legally lay a complaint to the authorities. We should, wherever practicable, do just that.

Where the Department has its strong points are in the overall wildlife conservation solution; the setting aside of wildlife reserves and game reserves.

One act I feel deserves full credit is the handling of the Pelican rookery at Lake Hindmarsh, where without Departmental control a wonderful event could have ended in tragedy for the birds, and indirectly for us all.

I believe that every naturalist in Australia gives their praise to the Fisheries and Wildlife Department of Victoria for preventing unnecessary disturbance by shooters to this Pelican rookery. May the Department always be as astute as it is at present!

TREVOR PESCOTT
Hon. Editor.

PRESIDENT'S REPORT

Following the recent tragic fires in Tasmania, I wrote to Mr. David Thomas, President of the Tasmanian Field Naturalists' Club expressing our concern at this great tragedy which had hit the Hobart region. This is his reply: "Many thanks for your letter and for the concern and thoughts of yourself and the Geelong Field Naturalists Club.

It is now ten days since the fires and we are just beginning to realise the cost in terms of our flora and fauna. The devastation can only be described as appalling and make no mistake, all could have been prevented. The Tuesday was the only day of declared fire danger (extreme), but the number of fires that were burning on the Monday night was staggering. There were probably over twenty within a thirty mile radius of Hobart, and some had been burning for days and even weeks.

Wildlife must have suffered catrostrophic losses, although there have been very few reports. I know over 700 bush birds of over 30 species were found washed up on a beach on Wednesday of this week.

Of the places you specially ask about, I have no information other than St. Chad which was burnt to the ground. Mount Field escaped but you are probably not aware that 25% of this National Park was totally burnt out in March of last year. However, the better known area from Russell Falls to Lake Sobson was untouched.

These fires may have sounded the death-knell of one of Australia's rarest birds, the Forty-spotted Pardalote. Some have survived but I fear that numbers may have been reduced drastically and that the destruction of their habitat may do the rest.

Your thoughts were very much appreciated by myself and members of the Tasmanian Field Naturalists Club; please convey our thanks to your members." End of quote.

The truth of the matter is as Mr. Thomas has said --- all this tragic loss of life, property and natural bushland could have been avoided. How often also, does this occur on our mainland. Each summer we experience losses and in many cases they could have been avoided. Are we lacking in education of fire prevention?

PRESIDENT'S REPORT (Cont'd.)

The State Government of Victoria have just published an excellent booklet "Summer Peril", and I commend you all to read it. There are copies in our library. It brings home to us the stark tragedy of fire whilst on the other hand it gives us great room for thought in prevention.

Finally as our year of 1966/67 comes to a close, I want to thank our members of Committee for the splendid support they have given me and our Club throughout. I must mention how sorry we were to lose the services of our Secretary early in the year and now we are to be without the service of our very active Treasurer, Mr. Ian Woodland, in order that he can pursue further studies. Both Mrs. Voi Williams and Mr. Ian Woodland have given stirling service to this Club and I wish to say a big 'Thank-you' to them both.

JACK WHEELER
President.

***

SIXTH ANNUAL REPORT

The Club is now entering its seventh year, and with a membership of 380 continues to grow. Enthusiasm amongst both Junior and Adult members remains high, which augers well for another successful year.

The Club regretfully accepted the resignation during the year of its Secretary, Miss Voi Boardman, who married Mr. John Williams in July and is now living in England. Voi had been Secretary since the inaugural meeting of the Club in 1961, the success of which, has been largely due to her efficiency and enthusiasm.

Another resignation the committee has accepted with regret is that of our Treasurer, Mr. Ian Woodland, who has resigned because of pressure of work. Mr. Woodland has been Treasurer for the past 2 years.

Mr. Ted Errey became a member of the committee during the year, to fill the vacancy caused by Miss Boardman's resignation.

SIXTH ANNUAL REPORT (Cont'd.)

General Meetings

We have continued to have well attended general meetings, with speakers offering a variety of subjects. The exhibits have always proved to be of interest, as has the "Question of the Month" segment.

Five members - Messrs. Andrews, Boardman, Chapman, Pescott and Wheeler, contributed to the members night, following the Fifth Annual Meeting in April.

May - Entomologist, Mr. J. Barnes, from the Plant Quarantine Section of the Department of Agriculture, once again entertained members with slides and exhibits.

June - Dr. Stephan Csordas, gave a highly interesting and entertaining look at life on Macquarie Island. He showed many excellent slides of birds and seals of the area.

July - Mr. Max Downes of the Fisheries & Wildlife Department showed films, and described the work of the Department with special reference to an expedition studying the Bustard.

August - In the absence of a guest speaker, members, Miss Joan Banks, Mr. B. Boardman, and Mrs. C. Ling, at shore notice, provided members with an interesting evening of slides and films.

September - Mr. Edgar of the Natural Resources Conservation League of Victoria, spoke on the formation of a "Save the Forests Campaign" originated by Mr. Iscacs after the disastrous 1939 fires which swept the State.

October - The subject chosen by Miss Helen Aston, "Bird Watching in Thailand and Japan" gave members an insight into the customs and ways of life of our Northern neighbours.

November - The flora of Central and Western Australia was shown to advantage, by the slides of Mr. H.A. Morrison.

December - Messrs. Rowe, Bound, Carr and Pescott covered Geology, Birds, Flora and Mammals in a "Symposium of the Otways".

February - Four excellent movie films were shown by Mr. David Corke of the C.S.I.R.O. film unit. One of the best was a film showing the work of amateur and professional bird banders.

March - Mr. Gordon Beaton, whose subject was the structure of fungi, spoke at the final meeting of the year.

SIXTH ANNUAL REPORT (Cont'd.)

Excursions

The second "Camp-Out" held by the Club was an outstanding success, this was at Wilson's Promontory, and was attended by over 60 members. A full report appeared in the January issue of "Geelong Naturalist".

The Club's monthly excursions were held to widely differing areas, Anakie Gorge, Modewarre, Coimadai, Serendip and You Yangs, Brisbane Ranges, Moggs Creek, Otway Ranges, Anglesea-Jarosite Area, the last trip of the year was by bus to Healesville Sanctuary. All were well attended by members, and by guests from different countries.

Club Activities

The growing list of subscribers to the "Geelong Naturalist" shows the popularity of the magazine.

The annual tree planting at the You Yangs in conjunction with the B.O.C. again proved very successful.

Groups of boys from the Grammar School were again active, pulling Bone Seed at the Dog Rocks, and erecting fences around rare plants on Mr. Boardman's property at Steiglitz.

A number of donations of books have been made to our Library over the past year, particular thanks are due to the donors; these include Mrs. Leigh, Mr. & Mrs. Thomson, Colin Begg, Mr. Jack Wheeler, Mrs. Higgins, Mr. & Mrs. Hunt, Mr. Woodland.

Several monetary donations have been made towards blocks for our magazine. These have been received with sincere thanks.

Two of our very active members Mr. & Mrs. John Hunt were involved in a serious accident last year, but are now well on the way to recovery.

Congratulations must go to our President, Mr. Jack Wheeler, for the work he puts into the news and excursion sheet which is now available to all members.

A public address system, purchased with the aid of Mr. Geoff Gayner has proved very beneficial at our General Meetings.

Junior members were presented with a number of bird and beetle project Albums and Cards from The Shell Co.

A survey by members of 300 acres of bushland near Anglesea was made with a view to having it declared a flora reserve.

SIXTH ANNUAL REPORT (Cont'd.)

The deaths of two members recently, Mrs. Chapman and Mr. Leyland have been a sad loss to the Club.

This has been a brief resume of our year's activities and as we start another year, I would like to urge all members to try and pass on their interest in natural history and conservation, particularly to the younger generation, who will be the future keepers of our heritage.

GORDON McCARTHY
Hon. Secretary.

***

A BIRD IN THE HAND

By C.J. Gibson, Highton.

Of course any bird in the hand is worth a dozen turkeys in the bush - particularly when life might well depend on it.

Plants, animals, reptiles and fishes contributed to the maintenance of life of the tribe for the Australian Aborigine was a skilful hunter. A wide variety of species of birds were also included in his menu to vary his diet and prove beyond doubt his exceptional skills of hunting.

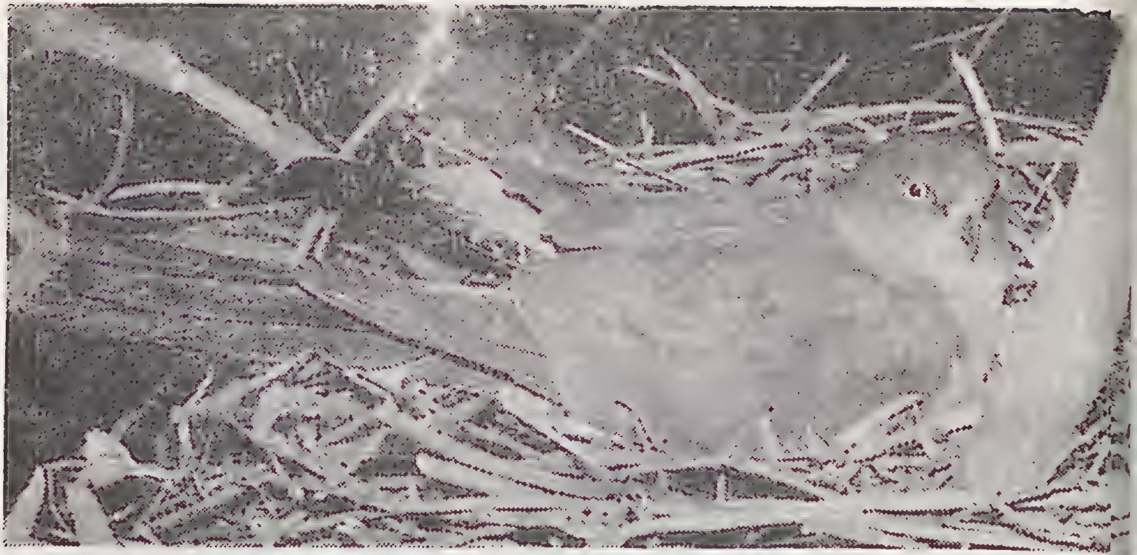
The following few notes relate to the aborigines of Victoria either before or during the early years of European settlement when there were still several thousand natives following their traditional tribal life. Interest is directed to the birds that were caught for food and the ingenuity practiced in catching some of them.

Some birds on the food list

Turkey (Otis Australasiensis) - Bustard (Eupodotis australis)
Emu (Dromaius Australis) - Emu (Dromaius novae-hollandiae)
Native companion (Grus Australasiensis) - Brolga (Grus rubicunda)
Swan (Cygnus atratus) - Black swan (Cygnus atratus) - Goose (Anseranas melanoleuca) - Pied Goose (Anseranas semipalmata)
Pelican (Pelecanus conspicillatus) - Pelican (Pelecanus conspicillatus)

A BIRD IN THE HAND (Cont'd.)

Common wild or Black duck (Anas superciliosa) - Black Duck (Anas superciliosa)
Mountain duck (Casarca Tadornoides) - Chestnut-breasted Shelduck (Casarca tadornoides)
Pink-eyed duck (Malacorhynchus membranaceus) - Pink-eared duck (Malacorhynchus membranaceus)
Spoon-bill (Platalea flavipes) - Yellow-billed Spoonbill (Platalea flavipes)
Musk duck (Biziura lobata) - Musk duck (Biziura lobata)
Wood duck (Chlamydochen jubata) - Maned Goose (Chenonetta jubata)
Teal (?) - perhaps the Grey or Chestnut Teal (Anas gibberifrons or castanea)
Speckled teal (Anas punctata) - could it be the freckled duck (Stictonetta naevosa)?
Cormorant (Phalacrocorax carboides) - Black Cormorant (Phalacrocorax carbo)
Shag (Phalacrocorax melanoleucus and P. leucogaster) - Little Pied Cormorant (Phalacrocorax melanoleucos) and probably the Black and/or Yellow-faced Cormorant (P. fuscescens and P. varius)
Sea Eagle (Polioetus leucogaster) - White-breasted Sea Eagle (Haliaetus leucogaster)
Large gull (Larus pacificus) - Pacific Gull (Larus pacificus)
Small common gull (Xema Jamesoni) - Silver gull (Larus novae-hollandiae)
Rosehill (Platycercus eximius) - Eastern Rosella)Platycercus eximius)
King lory (Aprosmictus scapulatus) - King Parrot (Aprosmictus scapularis)
Green leek (Polytelis Barrabandi) - Superb Parrot (Polytelis swainsoni)
Blue mountain (Trichoglossus multicolor) - Rainbow Lorikeet (Trichoglossus moluccanus)
Ground parrakeet (Pezophorus formosus) - Swamp Parrot (Pezoporus wallicus)
Pennant's parrot (Platycercus Pennanti) - Crimson Rosella (Platycercus elegans)
Cockatoo (species that fly in flocks) (Cacatua galerita) - White Cockatoo (Kakatoe galerita)
Cockatoo (without a crest) (Licmetis tenuirostris) - Long=billed Corella (Kakatoe tenuirostris)
Eagle (Aquila audax) - Wedge-tailed Eagle (Apuila audax)



Brown Goshawk

Frogmouth (left)

Photos Robert McKenzie

A BIRD IN THE HAND (Cont'd.)

Hawks (Teracidea berigora) - Brown hawk (Falco berigora)
(Astur approximans) - Brown Goshawk (Accipiter fasciatus) or Swamphawk (Circus approximans)
(Tinnunculus cenchroides) - Nankeen kestrel (Falco cenchroides)
Pigeon (large pigeon of upper Yarra) (Leucosarcia picata) - Wonga Pigeon (Leucosarcia melanoleuca)
Bronze-wing pigeon (Peristera elegans) - Brush Bronze-wing Pigeon (Phaps elegans)
Crested pigeon (Ocyphaps lophotes) - Crested Pigeon (Ocyphaps lophotes)
Magpie (common) (Gymnorhina leuconota) - Perhaps the Black-backed and/or White-backed Magpie (Gymnorhina tibicen and/or G. hypoleuca)
Minah-bird (Myzantha garrula) - Probably Noisy Miner (Myzantha melanocephala)
Wattle-bird (Meliphaga carnuculata) - Red Wattle-bird (Anthochaera carunculata)
Mutton-bird (Puffinurus brevicaudus) - Short-tailed Shearwater (Puffinus tenuirostris)
Crow (Corvus coronoides) - Raven (Corvus coronoides)
Lyre-bird (Menura superba) - Superb Lyrebird (Menura superba)
Owl (Strix delicatula) - Barn Owl (Tyto alba)
Laughing jackass (Dacelo gigas) - Laughing Kookaburra (Dacelo gigas
More-pork (Podargus humeralis and P. Cuvieri) - Tawny Frogmouth (Podargus strigoides)

The above list although extensive is not necessarily complete. It was taken in the main from Brough Smyth[1] giving the terminology in use about a century ago together with - following the dash - the modern nomenclature according to Cayley[2].

Catching the Bird

Perusal of this amazingly extensive list of birds caught by the aborigine for food is certain to lead on to other questions - questions such as, how did they catch such a shy bird as the plain turkey, or the wary parrots, or the mutton bird which is a sea bird that nests on islands off the coast. Some of these questions can be answered and prove the skill and ingenuity of the aborigine hunter.

The Bustard - The distribution for the bustard is now given as, inland Australia - rare in south eastern Australia. The fact that

A BIRD IN THE HAND (Cont'd.)

Gippsland, Yarra and Western District tribes all had names for this bird suggests their acquaintance with it.

The natives matched this bird's shyness with their cunning. In the Western Districts they took a long flexible rod and attached the skin and feathers of a small bird or a dead butterfly to the end and a running noose. When the hunter saw his bird he approached slowly with his decoy held up and a bush held in front to hide his body. The decoy was swung until the bird's attention was attracted and the while the bird stupidly stared the hunter moved closer until he coul slip the noose over the bird's neck. It was roasted either in an oven or on the ashes of a fire. The oven consisted of heated stone placed beneath and above the flesh to be cooked - the flesh being protected by leaves, usually grass.

The Emu - Emus can still be seen around the Grampians although the Yarra and Gippsland tribes, having names for these birds, apparently also knew them well.

The emu was hunted in much the same manner as the kangaroo. This called for a thorough knowledge of the habits of the bird, great skill, perseverance and endurance on the part of the hunter for the bird was not easily captured. However a 130 lb bird with plenty of nutritious meat was a prize to be sought.

The native after discovering the wheatabouts of the birds would stealthily stalk them until able to use his spear - rarely missing. If no natural shelter was available to hide his approach he would construct a screen of branches or have an accomplice break a twig or two in a different direction to distract the birds until he could get within range. The emu was usually roasted in the ashes of the fire.

Ducks - That early explorer Major Mitchell gives an account of nets being used to catch water fowl.

"The natives had left in one place a net overhanging the river, bein suspended between two lofty trees, . . the meshes were about two inches wide, and the net hung down to within about five feet of the water . . . It is customary for some of the natives to proceed up and others down the river, in order to scare the birds from other places; and when any flight of them comes into the net, it is suddenly lowered into the water, thus entangling the birds beneath until the natives go into the water and secure them."[3]

A BIRD IN THE HAND (Cont'd.)

Another extraordinary and ingenious method was observed in the Coulbourn region. A native swam under water, breathing through a reed, to a flock of ducks without alarming them. When within reach of a duck he took it by the feet, dragged it under water, wrung its neck, tucked it under his belt and noiselessly proceeded to take as many as he could carry or as many as he wanted. Variations of this method are used in some places where the native might cover his head with rushes or weed that grows in the water and then swim toward the flock.

Of course many water fowl were taken during moulting and nesting when they were more easily taken than at other times.

Parrots are wary birds generally and will require extreme caution of the hunter. Some were taken with the boomerang or kiley as it was sometimes called. A flock of cockatoos after being stalked carefully by the cautious hunter would take flight at which instant the native would bound forward and hurl the boomerang at the ground. It would spin in contortions first towards the ground and then sweeping upwards meet the startled flock. A bird or two was almost certain to fall.

Small birds - Mallee natives caught small birds that were attracted to the blossoms by digging a hole in the ground large enough for one of them to sit in comfortably. The hole was covered with bushes and in front small sticks were stuck in the ground. The native used a stick with a running noose and his imitations of chirping birds to catch up to two or three hundred birds in this way. A sufficient reward for a patient hunter.

It is obvious that the adroit hand of a skilful aborigine hunter could take almost any bird he fancied on the menu. That is, of course, taking into account the season of the year for there were undoubtedly times when hunger would be satisfied by any bird, any bird at all.

I can't help wondering, though, whether a particular bird was hunted because of a preference for the taste of its flesh or because it could be taken more easily. I also wonder how the mutton bird was taken - presumably on their nesting islands off the coast. The main question is, how did the natives get onto the islands?

References ..

1. Brough Smyth, R., The Aborigines of Victoria, Government Printer & George Robertson, Melbourne, 1878. Vol.I, Chapter, FOOD, page 18
2. Cayley, N.W., What Bird Is That? Angus & Robertson Ltd., 2nd Ed 195
3. Mitchell, Major T.L., Interior of Eastern Australia, 1838.

"SOME SMALL SHRUBS FOR THE GARDEN"

By Oonah McHaffie, Park Orchards.

Following the Editorial in the July Journal, in which Mr. Pescott mentioned that a few plants are used at the expense of better, more interesting, plants, it is, I feel, worth commenting on a few of the not-so-common natives which have done well for us under very adverse conditions.

We are in a heavy clay area, with very little topsoil, the land slopes to the West, and we are exposed to strong winds from all directions.

At first, because of our lack of knowledge, we dug holes and planted our natives into the clay and just hoped for the best, with consequent losses due to "wet feet".

Now we have put in one drain, and elsewhere, to correct lack of drainage, we plant on surface and build up around the plants with lighter soil. One of our greatest sources of loss among the natives has been root-damage by plants blowing about in strong gales following wet weather.

One small plant we would strongly recommend to anyone wishing to grow natives is the Victorian plant, Crowea exalata (Small or Summer Crowea). It is listed as approximate height one foot, though one catalogue gives the height as from two to four feet.

Our small bush was planted in December, 1964. It flowered in its first year and last season (1965-66) it commenced flowering in December and continued to be covered with pink waxy star-like flowers until the second week in July. This is no mean feat for a native and, added to the fact that it flowers in Summer and Autumn when, except for Melaleucas, few others are in flower, makes it a very desirable plant. This year it commenced flowering in October, so time only will show if its flowering season will continue till July again. Our bush is only about one foot high now and is such a delight when in flower that I cannot understand why it has not appeared more in gardens. As far as I know it is not commonly grown although readily available from nurseries. The cost may be a little higher than some (ours cost 6/- in 1964, but I have seen it listed recently at 55¢) but is

"SOME SMALL SHRUBS FOR THE GARDEN"(Cont'd.)

well worth it as it takes up little room, has a long flowering season, is very attractive, and appears to be very hardy. I think it would probably be frost resistant. At least, it stood up to the frosts this year and we are in a heavy frost area. I think we may have covered it for its first winter.

Another high on my list of recommendations is Pimelea ferruginea. We grew our plant from a cutting obtained from a fellow member of the Society for Growing Australian Plants. It was struck in a tin and planted out in April, 1961. As this was before we started planting on top of the ground, it is growing in heavy clay, in a very exposed position and doing very well. The only attention it has had is very sporadic feeding, and pruning after flowering. It produced one or two flowers in its first season and since then it has been covered with pink flowers every Spring. Between flowering seasons it is still a most attractive bush. It is about three feet high and six feet wide. It seems to be very hardy, disease resistant and does not suffer from frost. I note that in "Growing Australian Plants" by Lothian & Holliday mention is made that it has not proved generally reliable. It is possible that our soil, which I think would be acid - it is not growing in a garden bed - may suit it.

Another of the smaller plants which has done well for us is Boronia elatior (Tall Boronia) one of the West Australian natives. Our shrub is three feet high and about four feet across and is five years old. It is an attractive bush with light green divided foliage giving a feathery appearance and has deep pink - almost red - flowers. It flowers for a long period in Spring and seems hardy except that it, like so many natives, is subject to attack by white scale.

Of the tea-trees the only one I would really recommend is Leptospermum squarrosum (Peach Tea-Tree), N.S.W. This is a particularly attractive tea-tree and not as much seen in gardens as the much grown hybrid varieties such as Lambethii, Crimson Damask and Scarlet Carnival. The advantage Leptospermum squarrosum has over these hybrids is that, in our experience, it is free from scale. Also it is less common and therefore more interesting. We have removed two Lep. lambethii and one Red Demask, both very sick from scale attack.

"SOME SMALL SHRUBS FOR THE GARDEN" (Cont'd.)

Another advantage with Lep. squarrosum is that it flowers in the Autumn. A mass of pink flowers clustered thickly along the stems amongst the green foliage is a delightful sight.

The only disadvantage we can find is that it is a slow grower, comparatively, and takes longer to flower. Our shrub is now 6 ft. 6 ins. high which would be about the maximum but it did not produce any flowers until about two and a half years after planting and then only a few. It was five years old before it put on a really good display for us. Since then it has never looked back and has required no attention.

Grevilleas which have done well for us and are not as common as some varieties are juniperina rubra (Prickly Spider Flower of N.S.W.) - a very hardy variety - dallachiana (Dallachy's Grevillea - Eastern States) which only grows to about two feet and is easily struck from cuttings, and oleoides dimorpha (Olive Grevillea, Vic. & N.S.W.). The latter did partly blow over in a gale and had to be firmed back in the soil, since when it has not been in robust health but still flowers profusely. As it is easily propagated from cuttings we have two more planted out. Others which have not been in the ground for very long but appear to be satisfactory additions for a native garden are baueri, a small plant with red flowers, punicea (Red Spider Flower, N.S.W.) three feet, and sericea (Pink Grevillea, N.S.W.) four feet.

We have not had much experience to date with the smaller acacias but Ac. pulchella (W.A. Prickly Moses) is recommended as a fast grower and very beautiful when in flower as the small shrub is covered with large golden balls in late September and October.

Other shrubs in the small to medium group which have proved very satisfactory are Melaleucas hypericifolia and nesophila, Eriostemon myoporoides and Bauera rubioides (Wiry Dog-rose) but these are more usually found in gardens.

In Mr. Errey's article "Bringing Birds to our Garden" in the July "Naturalist", he mentions Euc. priessiana (Bell-fruit Mallee, W.A.) as being attractive to honey-eaters. Our small E. priessiana is about three years old and about two feet tall. The buds, which had

"SOME SMALL SHRUBS FOR THE GARDEN" (Cont'd.)

formed in the previous Spring, opened in September this year to a lovely display of large yellow blooms which attracted much attention from human visitors as well as honey-eaters. On one occasion, on an almost windless day, we wondered why the small bush was swaying about and on closer inspection discovered it was caused by a Little Wattle Bird clinging to the branches while feeding. It may be called the Little Wattle Bird but it looked rather large on such a small shrub!

Euc. priessiana, although a West Australian, would appear to be a good subject for Eastern gardens.

* * *

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STATEMENT OF RECEI
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Receipts

Donations	$ 86.30
Members Subscriptions	436.10
Geelong Naturalist Sales	53.95
Sales Club Badges	12.00
Sale Various Magazines	17.25
Advertising - Geelong Naturalist	123.00
Bank Interest	12.03
Sale Club Transfers	9.60
Sundry Receipts	8.05
Wilson Prom. Excursion	134.00
Healesville Excursion	126.00
Hall's Gap Excursion	9.00
TOTAL RECEIPTS	$1,027.28
	$1,027.28

Balance of Funds at 15/3/66	$295.70
Surplus for Year	0.56
	$296.26

I hereby certify that I have examined the Cash Book and Vouchers of
Receipts and Expenditure gives a true and fair view of the Club's

NATURALISTS CLUB

AND EXPENDITURE FOR YEAR
MARCH, 1967.

Expenditure

Magazine & Newsheet Costs	$ 482.36
Rentals	24.00
Postage	11.29
Photoflora '66	41.00
Subscriptions & Donations	18.50
Presentation	26.00
Club Transfers	20.00
Loud Speaker	64.61
Insurances	14.94
Petty Cash Expenditure	60.00
Wilson Prom. Excursion	126.00
Healesville Excursion	131.00
Sundry Expenditure	7.02
TOTAL EXPENDITURE	$1,026.72
Surplus for year c/d.	0.56
	$1,027.28
Balance of Funds at Bank 14/3/67	$296.26
	$296.26

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Hon. Treasurer.

Geelong Field Naturalists Club, and that the attached Statement of financial position for year ended 14th March, 1967.

(Sgd.) G.M. GILBERT A.C.I.S. A.A.S.A.
Auditor.

OBSERVATIONS ON TWO SPECIES OF BIRDS NESTING IN THE GEELONG AREA

By Mrs. F.F. James, Belmont.

Rainbow Birds

November 27th, 1966. Bird Observers' Club Excursion to "Lilydale", Batesford, the home of Mr. & Mrs. G. Belcher.

Observed Rainbow Birds nesting on the slopes above the Moorabool River

December 10th, 1966. Returned to "Lilydale" to observe and photograph Rainbow Birds at nesting tunnels.

We had 4 tunnels under observation. Parent birds were actively feeding, catching small moths on the wing and returning to the outer branches of nearby trees while they devoured their catch.

No sign of young.

December 17th, 1966. Again returned to "Lilydale" to observe and photograph Rainbow Birds.

Parent birds still active, with no sign of young.

January 14th, 1967. Again visited "Lilydale" and site of nesting tunnels. All four tunnels had been cunningly dug out by a fox (or foxes) which had not followed the tunnel but dug down from above entering the burrow close to the nesting chamber. Claw marks and the odour of fox evident. No young were apparent.

Only one bird was seen.

NOTE. Early in February Mr. McCarthy observed a number of Rainbow Birds in this vicinity apparently gathering prior to their northward migration.

We are very grateful to Mr. & Mrs. Belcher for allowing us to enter their property on the above occasions.

Rainbow Birds - are also known as Bee-eaters, Spine-tails, and Pintails. About 10 inches long, their colouring is most striking. The crown, back and inner wings are brownish green; wing quills are orange brown, with black tips; there is a black band on the throat, the lower back is blue and the tail black. Two long feathers clearly seen in flight extend about two inches beyond the tail (hence Pintail). During the nesting season these become considerably worn

OBSERVATIONS - BIRDS NESTING IN GEELONG AREA (Cont'd.)

as the bird moves in and out of the burrow, and may almost disappear.

The birds breed in Southern Australia arriving in September or October and departing in February or March. It is thought that most of the birds winter in islands north of Australia. However, we observed them in great numbers in the vicinity of Cairns, at Magnetic Island, off Townsville, and as far south as Rockhampton, in August of last year.

The nest is a tunnel in sandy soil from 1 to 3 feet in length with a cavity at the end. The call note is characteristic and resembles the initial shrill notes of a cricket.

Their flight is graceful and erratic, soaring high above the tree tops and then swooping down to catch their prey - insects - which they catch on the wing and devour while at rest on the outer branches of tall trees. Although Bee-eater is an alternative name, they were not seen to eat bees at Batesford.

Nankeen Night Herons.

January 14th, 1967, 11.30 a.m. Observed 4 Nankeen Herons in swamp at Marnock Vale, at southern end of Shannon Avenue.
2.00 p.m. Returned with photographic equipment. Birds had left swamp and were perched in a tree beside swamp. They were very wary and flew off in the direction of Queen's Park.

January 15th, 1967, 9.30 a.m. Observed and photographed at least 10 herons feeding in swamp.

Both days were heavily overcast, with misty rain falling.

February 4th, 1967. Observed and photographed Nankeen Night Herons at nesting colony an a wooded area within the Geelong district.

In one roost counted approximately 12 adult birds, and at least 4 immature birds - grey and brown mottled - which had left the nest and were practising flying in outer branches.

Since birds leave the nest at about 4 weeks and fly at about six weeks, it would appear the young were from 4 to 6 weeks old. (Birds of the World P.53.)

Other colonies in same area had birds in similar numbers and ages to that first observed.

Beneath the roosts were some young birds which had fallen from the

OBSERVATIONS - BIRDS NESTING IN GEELONG AREA (Cont'd.)

nests and died, and many small fish approximately 6-8 inches in lengt

A large bird 19 inches in length, the Nankeen Night Heron is mainly nocturnal. Further reading, however, revealed that on cloudy or rainy days it may leave the roost to forage for crabs and other crustacea, frogs, insects and small fish. Thus our observations of a group of birds during a typical cold, wet spell were unusual but no out of character.

The Nankeen Night Heron bears a strong resemblance to the Black-Crowne Night Heron of the Americas and Eurasia and the Yellow-Crowned Night Heron found only in the Americas, but its colouring is unique. Its crown is black with long, white plumes extending from the nape, but its back is a rich chestnut brown with the abdomen buff, and the neck and chest reddish chestnut. The legs are long for wading; and so is the neck. In flight the neck is kinked like an S. The bill is thick; much thicker, for example, than that of the White-faced Heron.

By day Nankeen Night Herons roost in the leafy tops of tall trees in colonies. Nests are roughly constructed platforms of sticks, and may be clustered quite close together.

Two interesting observations I would like to mention. In colouring, and when at rest the young seemed to me to strongly resemble the Brown Bithern which we saw one wet year in the swamps along Barwon Heads Road. This likeness was confirmed when I read later that the Herons and Bitterns are closely related, both belonging to the Order Ciconii formes.

With wings outspread, and neck and head held high one young bird looked for all the world like a drawing of its primitive ancestor Archeopheryx. How apt this fleeting impression was! For here I quote,

> "The Ciconiiformes are an ancient group dating back some 100 million years to Cretaceous times."

*****

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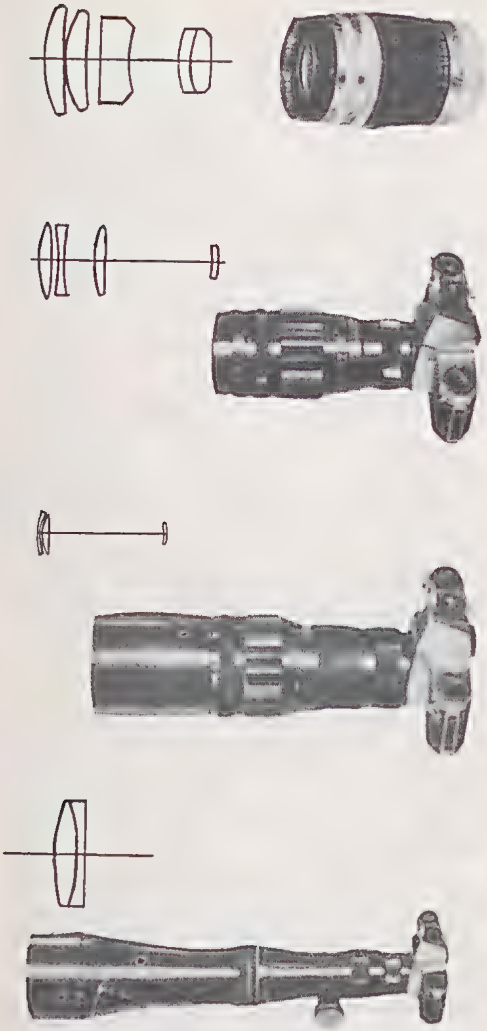


PICTURED ABOVE ARE LENSES FOR THE ASAHI PENTAX — FROM THE TOP — 135 mm, 200 mm, 300 mm, 500 mm

BIRDS AROUND THE FARM

By Joyce Hunt, Paraparap.

Honeyeaters.

White-plumed honeyeaters are rather pugnacious, and for this reason they are the only honeyeaters that nest in our garden. This we regret, as there is plenty of room and plenty of food for other types. However, they are welcome, and they seem to particularly like the red bush salvia that we have in several places. (I don't know the name of this old-fashioned shrub, but my older readers will remember it, as they probably pulled the red flowers out of the calyx, and sucked the nectar out of the base of the flower on the way home from school!)

We are often fascinated by the way these birds hover for seconds at a time with their beaks in the flowers. They hang at all angles, frequently upside down while imbibing the nectar. Another amusing feat is the way they use the wooden upright of the bird table to cling to while they stretch out to reach the flowers. We thought this rather clever until they discovered the new hose stand. This is of metal, less than half an inch in diameter, and of course slippery. Yet they cling to this vertical pipe, using it as a stand from which to reach the nectar in the bush!

Goldfinches.

Early in November we suspected that the goldfinch was going to build in the crab-apple beside the path to the back door. Two days later I watched her carrying building material to the chosen site, and later, when she got to the carpeting stage, she was observed on the telephone wire with a piece of downy white feather in her beak. There were several other goldies about at the time, and she would not betray the presence of the nest.

From the doorway I watched her for minutes. She flew from one bush to another, even up into the big blue gum, but she would not go near the crab-apple, nor would she drop the feather, but flew around looking like an old man with a white beard. Eventually she flew around the back of the crab-apple very swiftly, and with astounding accuracy disappeared into the exact spot where the nest was. None of the other goldies would have seen her, and had I blinked at that second I would not have seen her either.

Does anyone know if there would be a reason for this evident secrecy

BIRDS AROUND THE FARM (Cont'd.)

Victory.

Wagtails seem to enjoy dislodging other birds, and even annoying them. One day, hearing a lot of noise, I discovered two kookaburras were perched on the wind-indication arrow on top of the flagpole. One would hardly expect it to accommodate one kookaburra, let alone two! The noise was caused by their resentment of a wagtail who was chirrying them repeatedly. Despite pecks and divebombings, they refused to move, just ducking their heads when the attacks came. This went on for so long that I couldn't spare time to watch but next time I looked the kookas were gone, and the wagtail was in sole possession of the flagpole. He wasn't singing, but if he had been, I'm sure it would have been his own setting of

"I am monarch of all I survey;
My right there is none to dispute."

Swallows.

Last year I reported on a swallow's nest built inside a carton inside another carton on the rafters of the shed. This nest has been used again for at least three more families. The strain on the old house evidently became too great and it started to come adrift. This was discovered when two dead nestlings were noticed on the ground. There were two more babies in the next, which was hanging precariously. The nest was then tied up with string and made secure, and the two young were raised successfully and gave the writer much pleasure as they were brought round to the sunshine every morning, and sat on the wire outside the kitchen window. Young swallows are really beautiful in the sunshine and these two sat close together, while mum and dad ran a shuttle service keeping them supplied with food. The previous family had numbered four, and it was a full time job to keep them fed. Usually all sat facing the same way, but it was amusing to watch when, as sometimes happened, the two outside ones faced the garden and the two inside ones faced the window. One could always tell when one of the parent birds was approaching. There would be a sudden agitation of tail and wing feathers which stopped abruptly when the food arrived. With four young to feed, and both parents bringing food, one wondered how they received a fair share each. On one occasion we timed them - visits with food were made at intervals of 10 seconds to 40 seconds, but most times one or other would return with food after about 20 seconds. They certainly have to work hard for their food!

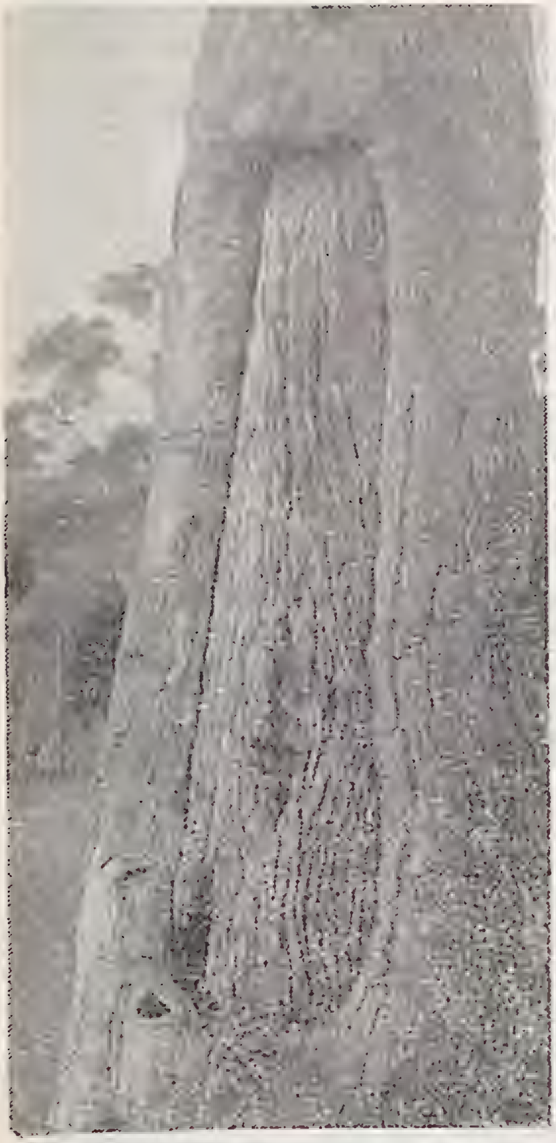
"RED GUMS"

By L.W. Elms, Belmont.

The Red Gums are varieties of our Eucalypts which are to be found fairly widely distributed throughout Victoria. They gain their name from the blood-red gummy sap which the tree exudes when damaged, and from the distinctive red coloring of the timber, both in the growing tree and in the seasoned wood.

Actually there are two varieties of red-gums, namely the River Red Gum (Eucalyptus Camaldulensis), and the Forest Red Gum (Eucalyptus Tereticornis). The River Red Gum is predominant right throughout the Murray River Valley, where it grows up to 150 feet in height. It is also to be found growing beside water in southern and eastern Victoria, and is one of the few Eucalypts to extend across the Torres Strait to Papua, and throughout Central Australia. Although they cannot survive without occasional flooding, they also cannot survive under perpetual flooding, and along the banks of the Murray River at Mildura, there are hundreds of redgums standing dead as a result of the ponding caused by the weir. This tree was originally known as Eucalyptus Rostrata, because of the distinctly rostrate, or beaked cap of the flower bud. However about 1943 it was realized that the species had been described and named from a tree in the garden of the Duke of Camalduli in Italy. The law of priority required therefore that the name be changed - (i.e. the name first given to a newly discovered species must be adopted.) Hence this tree is now officially known as Eucalyptus Camaldulensis.

The other red gum is called the Forest Red Gum, as it does not need to grow beside water, and is found growing widely as single specimen trees of more upright habit, over the moist alluvial plains of Victoria. Its botanical name is Eucalyptus Tereticornis, the latter word referring to the long "round-horned" caps on the flower buds. These are definitely conical, and can be easily distinguished from the finely pointed caps of the River Red Gum. The timber of both varieties is much sought after for heavy construction because of its hard and durable nature. It is used for posts, piles and railway sleepers because of its resistance to rot at ground level, and also because it is one of the few timbers



Canoe Tree at Queens Park

Red Gum at Barwon River
A favourite nesting tree of at least five different species within 3 years

Photos Trevor Pescott

"RED GUMS" (Cont'd.)

which the white ants (termites) will not attack. The Forest Red Gum flowers from mid-winter until summer and is valued as a honey tree, but the River Red Gum usually only has its small creamy colored blossoms every second year. It stays in bud for 11 to 12 months, but then has only a very short blooming period. It is one of the heaviest yielders of nectar, but the leaves are subject to gall insect attack, and the blossoms attract the "Rutherglen Fly", to the consternation of apiarists.

As is common with many eucalypts, the juvenile leaves are different from the adult leaves, being rounded in shape, whereas the mature leaves are long and sickle shaped. The juvenile leaves of the River Red Gum have no stalks, and grow in pairs with one on each side of the stem.

As an Art Form, the red gum is highly esteemed by artists and photographers, and paintings of these lovely trees with their many coloured trunks, by Hans Heysen and John Rowell are well known. Because of their beauty and their extremely wide distribution throughout Australia, the Red Gums could almost claim recognition as Australia's national tree. However, it is not wise to camp or picnic immediately under an old red gum, as sometimes in quite calm weather, particularly when it is very hot, a large branch may crash down without any warning.

*****

Footnote ..

The Editor would like to hear of any Canoe trees or Aboriginal Middens, or Artifacts found in the Geelong area.

See Page 25 for Queen's Park Canoe Tree - a Red Gum.

*****

"QUESTION OF THE MONTH"

Questions please

The question box is available at each meeting for your use - if you would like any question answered, please write it down and place it in the box.

*****

The "Question of the Month" answered at the March meeting of the Club was a multi-barrelled one. -

How do the cicadas make their noise?

What makes them stop simultaneously?

Why do we never see them flying about?

Where do they go when silent, do they remain in the trees?

Is it true they breed underground and come up like shoots after a storm?

The answers to these questions are well covered in the November 1951 issue of the magazine "Wild Life" edited by the late Mr. P. Crosbie Morrison.

The author of these following notes, F.G. Elford, wrote a series of articles in the Wild Life series under the heading of "Wild Life in the Schools". About the song, Mr. Elford writes -

"Throughout the ages, people have recognised cicadas mainly by their "song". They are the "shrill singers" mentioned in many ancient myths and poems. Few animals are capable of producing such a continuous shrill, ear-splitting noise. However, this "song" is not made by all cicadas. The males are the songsters; the females are dumb. There are exceptions to this rule, for there is one Australian species at least of which both sexes are dumb. As in the mole cricket we studied earlier in the year, it

"QUESTION OF THE MONTH" (Cont'd.)

is believed that the song is a mating call.

The production of the noise appears to be based on the same principle as that whereby a crackling sound is made when the sides of a kerosene tin are suddenly pushed in or forced out. Near the union of the thorax and abdomen, on the underside of the males, are a pair of membranous covers or drums covering pits that are separated from a large abdominal air chamber by tightly-stretched parchment-like membranes. Attached to these membranes are a number of strong muscles. The air chamber occupies the greater part of the insect's abdomen, the internal organs being squeezed into a very small space at the tail-end of the abdomen.

The membranes, on being rapidly pulled in and out by the muscles, produce crackling sounds that merge into one shrill, continuous noise, amplified by the walls of the pits and the drums, and made more resonant by the air chamber. While the noise emitted by one insect is sufficient to attract attention, that produced by hundreds of cicadas on a hot summer's day becomes almost nerve-racking."

With regard to the other section of the question; the Editor answered as follows:-

Being related to the bugs or Hemiptera, the entire life of the Cicada revolves around its home trees. Cicadas do fly, but only to move for a well defined purpose of finding a mate, and eventually producing their progeny. After this, their adult life is useless and they die or are eaten by birds.

The female lays a series of eggs in crevices in the bark of trees; they hatch and the flea-like larvae fall to the ground, burrow in and live by sucking sap from tree roots.

One species - at least, stays underground as a nymph for about 17 years; other species spend shorter juvenile periods.

When reaching maturity, they come to near the surface of the earth, and as soon as atmospheric conditions are suitable, they emerge and become adults - rather like "shoots after a storm".

I do not know why they should stop singing simultaneously - presumably the interference to stop one singing affects all others in the area in the same way.

*****

NATURE NOTES
At Random

LOSS OF A TRIBE
(From "Man of Yesterday")

"The two to three thousand who roamed the District at the beginning of settlement were reduced to something over six hundred by about 1876. There were 173 in the Geelong tribe alone in about 1840; it had dwindled to thirty-four thirteen years later.

It will never to known how many were killed by the squatters and their men - certainly the numbers were much greater than the official records indicate. Many were shot down. Some - and there is evidence for it - were poisoned by gifts of food. But the chief cause of their extinction was the destruction of their way of life and their infection with white diseases."

(Kiddle, M. "Men of Yesterday"
M.U.P. 1961, page 127.)

***

FLOATING SWAN'S NEST
From Jim Quirk, Sandringham.

I have recently returned from a trip which took me through Wodonga, and the following observation struck me as most remarkable.

It is of a black swan on its floating nest on a lagoon right in the township of Wodonga, about 15 acres in extent which is a sanctuary for native birds. I understand this nest which was only 3-4 yards from the bank when I snapped it, had been blown there from further out, in a storm - however the swan stuck to it - I saw it in September and

AT RANDOM
FLOATING SWAN'S NEST (Cont'd.)

I believe 2-3 weeks later 2 cygnets were hatched. Although this area is small and has habitation and a golf links very close by, a good variety of birds are found there, earlier in the year I saw about a dozen glossy ibis there, a bird I personally had never seen before. It is to be sincerely hoped that areas like this survive despite population pressures, we can't afford to lose any of them.

***

From "Wildlife Review", (the British Columbia Journal, May 1963.)

The quotations are undoubtedly the best we have come across; if we all remember them, what a wonderland our bush would be, and how well we can preserve and publicise them.

> *"Leave nothing behind in the woods except your footprints. Take nothing but pictures."*

And again -

> *"Don't be afraid to use what talents you possess; the woods would be very silent if no birds sang except those that sang best."*

***

REMEMBER ...

ARTICLES AND PHOTOGRAPHS ARE ALWAYS REQUIRED
BY THE EDITOR.

JUNIOR PAGES

These are your pages juniors - it's up to you to give the Editor Nature notes and views to fill them.

***

A HINT FOR BIRDWATCHERS

A wise old owl sat on an oak,
The more he saw, the less he spoke.
The less he spoke the more he heard -
Why aren't you like this wise old bird?"

***

We too often think of an essential feature of a bird watcher's equipment is a good pair of binoculars - an item usually too expensive for us to buy until we start work and can save some money especially for this.

But remember the old owl - he sees so very much, not only other birds, but animals, and insects, by moving quietly, and speaking rarely. Remember, too, that it is most important to write down every detail including the date and place you see anything of interest - I believe the Wise Old Owl would do this, if he could carry pencil and notebook under his wing.

***

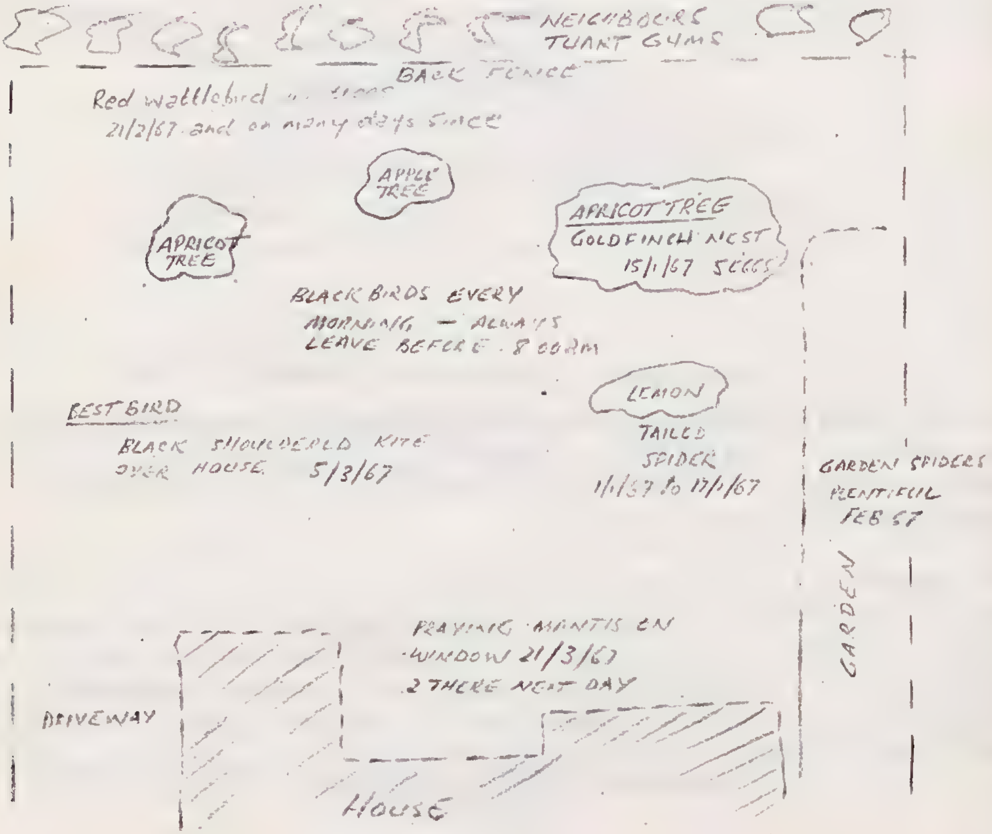
JUNIOR PAGES

Most juniors are very busy with school work and do not have time to make many nature excursions. But even notes about your garden can be extremely interesting if you keep your eyes wide open and a note book handy.

My back garden looks like this - see how I have made notes about particular plants etc. over the three months. Can you do better? Remember day-by-day observations take only a few very brief moments but can be most interesting if kept up to date.

Try it over the next three months, and let the Editor have your plan and your day-by-day or week-by-week diary. The best we receive will be printed in the next issues.

Remember my notes are VERY BRIEF. Make your notes VERY DETAILED.



Red wattlebird .. seen 21/2/67 and on many days since

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Published by
THE GEELONG FIELD NATURALISTS CLUB
Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in each month, at 8 p.m. at the Reformed Presbyterian Church Hall, Fenwick Street, Geelong.

Visitors Welcome.

All papers submitted for pubilcation in this journal should be sent to the Hon. Editor.

VOL. 4 NO. 3 OCTOBER 1967 PRICE 25c.

GEELONG NATURALIST

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"WONGA HUT" WYPERFELD NATIONAL PARK

egistered at G.P.O. Melbourne, for transmission by post as a periodical. *Hon. Editor: Trevor Pescot*

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

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COVER PHOTOGRAPH

Emus passing the famous "Wonga Hut" Wyperfeld National Park.
by H.E. Tarr.

GEELONG NATURALIST

Vol.4. No.3. October 1967.

EDITORIAL

Since the Geelong Field Naturalists Club was formed in April 1961, a great deal has been achieved particularly in the field of publicity towards the needs of conservation. But it may seem that some - indeed most - of our activities have been designed solely for the satisfaction of the few who have become Club members.

This, of course, is not a true picture of the value of Club activities; although we undoubtedly enjoy our recreation, there is the tendency always to search for ways of enlarging and consolidating our system of reserves and parks, and to bring the needs of nature conservation to the fore.

One may wonder how a campout at the Grampians or Wilsons Promontory for example, can help conservation of the areas - the simple fact is that most of us have not seen these areas from the naturalists' viewpoint; and until we know an area at least to a small extent from first-hand observations, we are not qualified to present our views should the need arise.

The same thing applies to the various places we visit during the normal excursions, and once having inspected an area, we can, as a Club, air our views with something of authority.

This even extends to the various views we hear expressed at our monthly meetings - admittedly the speaker gives his own ideas, and these could be quite biased; but at least we have something on which to base our own statements at a later date.

The Club's latest venture - jointly with the Geelong Group of S.G.A.P. - is a Nature Show. These two Clubs have combined extremely well to present the Show, and now that the ground work has been done by the Show Committee, it is up to the individual member of each Society to complete the task by ensuring the attendances are up to expectation.

TREVOR PESCOTT,
Hon. Editor.

OBSERVATIONS OF BIRD LIFE PRECEDING AND DURING THE DROUGHT IN 1967 IN WYPERFELD NATIONAL PARK. By H.E. Tarr, Nunawading.

The year 1967 has produced the most severe drought the Park area has undergone since its Gazettal in 1921 as a National Park. The rainfall since mid-December 1966 has only been 185 points up to May 31st, 1967.

Judging by the actions of some birds it would appear they are fully aware of what is to follow. The Emu (Dromaius novae-hollandiae) would be an extra good example. The normal season's sightings in the Park of males with young would range from twelve to twenty birds with clutches averaging about eight young. During the 1966 breeding season from June onwards only two clutches of young were observed, these were clutches of four and six young respectively. An amazing feature of this bird in the Park is the fact that only one full clutch of eggs have ever been officially recorded there and these have been deserted. This clutch and odd broken eggs observed in the Park have all been found amongst thick scrub such as Mallee and Tea-tree. Males are noted with their families until the second season when in about April a female will be noted in the party. This appears to be the breaking up of the happy family.

Birds such as the Lowan (Leipoa ocellata) and the Wedge-tailed Eagle (Aquila audax) appeared to have a normal breeding season during 1966. Numbers of species recorded were at an all time low during this season. The Park bird list at present stands at 201 native and 3 introduced species. In a normal season it would be possible to list in the vicinit of 100 species in a week but during the 1966 season one would be flat out to reach the 60 or 70 mark. The usual migratory species were either missing altogether or in very small numbers. In one week in the Park during October 1966 I noted only one single Wood swallow - a Dusky (Artamus cyanopterus) White-winged Trillers were very scarce, and the only cuckoo noted during the season was a Fan-tailed (Cacomantis pyrrhophanus). Songlarks were also absentees, but a few Sacred Kingfishers (Halcyon sanctus) turned up and we were able to list our first breeding record of this bird in the Park area. Very few Cockatiels (Leptolophus hollandicus) and Budgerigars (Melopsittacus undulatus) paid us their usual annual visit.

Following the 1966 breeding season, I have made the following

OBSERVATIONS OF BIRD LIFE PRECEDING AND DURING THE DROUGHT IN 1967 IN WYPERFELD NATIONAL PARK. (Cont'd.)

observations. Following the normal pattern Regent Parrots (Polytelis anthopeplus) have practically vanished from the area. Flocks of White Cockatoos (Kakatoe galerita) and Galahs (K. roseicapilla) appear to be larger than usual. Smaller Parrots such as the Mulga (Psephotus varius) and the Red-backed Parrot (P. haematonotus) are in very low numbers indeed to a normal season. On the other hand, a small flock of Little Corellas (Kakatoe sanguinea) have paid us more visits than normally. Hawks such as the Peregrine Falcon (Falco peregrinus) and the Little Falcon (Falco longipennis) and Goshawks are more noticeable now; food probably being easier to secure with the small birds feeling the pinch of the very dry season. Smaller birds, such as Honeyeaters are more easily observed now as there are very few places left for them to bathe and drink at. The Yellow-throated Miner (Myzantha flavigula) has carried on in its normal pattern with young leaving the nest as late as May.

Footnote:

During July 1967 Mallee Fowls placed more material in their mounds than I have ever noted before.

What reason lies behind this strange behaviour on their part?

*****

A TREASURE SHRINE OF LIVE JEWELS

By Lilian Memmott, Belmont.

This is a very apt title for the Glow-worm Grotto in the Waitomo Caves, New Zealand.

Here hundreds of thousands of tiny insects shed a luminous glow on the Stalactites. They seem to cover the roof of the cave above the underground river like a living Milky Way. These Glow-worms are not the ordinary ones seen elsewhere. They are unique to New Zealand. The shine comes from the larval stage and its "lamp" is situated on the last segment of the tiny body. It goes through four stages, egg,

A TREASURE SHRINE OF LIVE JEWELS (Cont'd)

larva, chrysalis, imago. At the grub stage they are about one and a half inches long, very slender looking almost like a matchstick.

The food of the Glow-worm consists of tiny midges which it catches on silken threads covered with globules of a sticky substance. They spin these threads, sometimes as many as twenty, and hang them from a little silken hammock they weave. Attracted by the glow or light from the larvae, the midges fly onto the sticky thread and are caught fast. The thread is then drawn up with the tasty meal.

The cave provides plenty of sustenance as the banks of the underground river are infested with midge grubs that live on the organic matter in the mud.

Looking up as the boat is pushed midstream one sees this sky of living jewels - a sight once seen never forgotten.

*****

FIRST EXCURSION - PART 2.

By Marjorie James, Belmont.

Part two...... In the July issue of Geelong Naturalist, the article desribing a trip to Queensland by Mr. and Mrs. James of Belmont was printed; the following is a list of birds seen, and the place where the first observation was made.

Throughout Victoria.
Eastern Rosella, Willy Wagtail, Blue Wren, White-backed Magpie, Magpie-lark, Raven, Welcome Swallow, White-faced Heron, Black Swan, Kookaburra, White Cockatoo.

Northern Victoria.
Flame Robin.

Through New South Wales.
Crested Bronzewing, Yellow-billed Spoonbill, White-plumed Honeyeater, White-winged Chough, Nankeen Kestrel, Brown Hawk, Spur-winged Plover,

FIRST EXCURSION - PART 2 (Cont'd)

Grey Fantail, Budgerygah, Little Black Cormarant, Black-backed Magpie, Galah, Pied Currawong.

Warrumbungle Ranges N.S.W.
Wedge-tailed Eagle, Crimson Rosella, Eastern Shrike-tit, White-throated Tree-creeper, Yellow Robin.

Keepit Dam, N.S.W.
Eastern Spinebill, Grey Teal, Pelican, Yellow Weebill, Black-faced Cuckoo-shrike.

Richmond River, N.S.W.
Jabiru.

Byron Bay, N.S.W.
Silver Gull, Eastern Swamphen, Fairy Tern, Gannet, Yellow-winged Honeyeater, Red-backed Wren.

Brush Turkey at O'Reilly's
Photo by F. James.

Coolangatta, Qld.
Rainbow Lorikeet.

Glasshouse Mountains, Qld.
Noisy Miner.

FIRST EXCURSION - PART 2 (Cont'd.)

Brisbane, Qld.
Whistling Eagle, Red Wattle-bird, Java Dove, Sacred Kingfisher, Southern Fig-bird.

St. Lucia, Qld.
Blue-faced Honeyeater, Apostlebird, Pale-headed Rosella.

Caboolture, Qld.
Red-backed Sea-eagle.

Central Qld.
Brolga, Grey Butcher-bird.

Townsville, Qld.
Blue-winged Kookaburra, Whistling Tree-duck, Masked Plover, White-headed Stilt, Noisy Friar-bird.

Cairns, Qld.
Fork-tailed Kite, White Ibis, Plumed Egret, Black Duck, Rainbow-bird, Yellow Fig-bird, Satin Flycatcher, Peaceful Dove, Bar-tailed Godwit, White-necked Heron, Little Egret, White Egret, Royal Spoonbill.

Green Island, Qld.
Reef Heron.

Atherton Table-land, Qld.
Pheasant Coucal, White-breasted Wood-swallow.

Poinsettia Gardens, Qld.
Yellow-breasted Sunbird, Spangled Drongo, Jacky Winter, Chestnut-breasted Finch, Bar-shouldered Dove.

Yellow-breasted Sunbird at nest.
Photo by F. James.

FIRST EXCURSION - PART 2 (Cont'd.)

Magnetic Island, Qld.
White-breasted Sea-eagle, Pied Butcher-bird, Stubble Quail, Varied Triller, Mistletoe-bird.

Rockhampton, Qld.
Singing Honeyeater, Rufous Whistler.

Mt. Coottha, Qld.
Scaly-breasted Lorikeet.

Wynnum, Qld.
Eastern Curlew, Whimbrel.

Redland Bay, Qld.
Yellow-faced Honeyeater.

Cleveland Bay, Qld.
White-breasted Cormarant.

O'Reilly's, Qld.
Regent Bowerbird, Satin Bowerbird, Red-browed Finch, Lewin Honeyeater, Brush Turkey, Spotted Scrub-wren, Green Cat-bird, Whip-bird, Red-sided Parrot, King Parrot, Black=faced Flycatcher, Golden Whistler, Yellow-throated Scrub-wren, White-browed Scrub-wren, Grey Thrush, Mountain Thrush, Brown Weebill, White-headed Pigeon, Flock Pigeon (Top-knot).

Evans Head, N.S.W.
Little Friar-bird, Green-backed Honeyeater, Caspian Tern.

Nambucca Head, N.S.W.
Yellow-tailed Black Cockatoo, Pipit, Little Wattle-bird, Grey-backed Silvereye.

Sydney, N.S.W.
Black-faced Wood-swallow, Red-whiskered Bulbul, Goldfinch.

Bateman's Bay, N.S.W.
Double-banded Dotterel.

Lakes Entrance, Vic.
Wonga Pigeon, Mountain Duck, Brush Bronzewing, Dusky Moorhen, White-fronted Chat.

*****

QUESTION OF THE MONTH

In this issue of "Geelong Naturalist", three questions have been answered.

"The national emblem of Ireland is known as the 'Shamrock'. What plant constitutes the 'Shamrock'?

The answer to this question is as follows:

According to tradition, St. Patrick when preaching to the Irish, plucked a leaf from a weed on the roadside to illustrate the principle of the Holy Trinity - three individuals, yet as one individual -, the three leaflets, each complete in themselves, yet all combining to make one complete leaf. For such a parable, there are species of clover and wood-sorrels with leaves almost identical but of course their flowers are different as are also their botanical relationships.

Today, plants are classified by their flowers and not by their leaves but of course descriptive botany was probably not an exact science in St. Patrick's day, and as no mention is made of any flower we are more or less left in doubt.

We do know that the Shamrock in its tradition had a trifoliate leaf. Clovers and wood sorrels have this feature. Some authorities regard one of the clovers as the traditional Shamrock but there are others who claim it to be the oxalis or wood-sorrel, of which there are several species in Ireland. The latter claim that the Shamrock is an edible plant to humans and that clovers are most unpalatable to human taste, on the other hand, the oxalis has very sappy stems and its acid content can make it pleasant to chew. As children, we used to love visiting a certain church yard where oxalis grew, and we delighted in chewing handfuls and relished its distinctive taste. To us the plant was known simply as 'sour-grass'.

On referring to my library I find that in an encyclopaedia a Shamrock is the name of several plants akin to clover, one of which is now

QUESTION OF THE MONTH (Cont'd.)

generally accepted as the Shamrock - hop clover (Trifolium minus). A modern dictionary has this to say: "A small trefoil plant, the national emblem of Ireland is now regarded as either white clover or wood-sorrel."

Perhaps we should leave it at that.

*****

"Do butterflies eat?"

The answer is given by Mr. E.G. Errey.

Many moths and butterflies take in liquid food and water through a proboscis. This is a tube extending from two mouth-parts, the jawlike maxillae, between the upper and lower lip. Lobes of these maxillae are elongated and joined at the edges. When not in use the proboscis is coiled beneath the head like the hair-spring of a watch.

It is very small or absent altogether in some species, such as the gum emperor, which need no food. In these types the eggs of the female are fully developed when she leaves the pupal case.

On the other hand, the proboscis of some insects is up to five or six inches long. Some tropical moths can penetrate fruit skins, even of oranges, in order to extract the juice. Spores of mould may enter the fruit with the proboscis, and considerable damage can be caused.

The life span of moths and butterflies varies greatly, being so short in some cases that feeding is unnecessary. Some species, however, live for months, often travelling great distances, so food is taken to augment the energy supplies stored up by the voracious eaters during the larval stage.

Regarding the taste buds on the feet of these insects, some species do have these sensory taste organs. Drops of sweet liquid applied to them by experimenters have caused the proboscis to

QUESTION OF THE MONTH (Cont'd.)

uncurl, a phenomenon that could be compared in humans to mouthwatering at the sight or smell of food.

It seems highly probable too, that these taste organs would enable the female to find the right plant for the larva food supply before depositing her eggs.

*****

"What is the origin of the name 'Nankeen' as applied to the Nankeen Night Heron, etc.?"

Mr. E.G. Errey has the following answer to this question.

The word "Nankeen", meaning yellow or pale buff, came into the English language over 200 years ago. It came from Nankin, or Nanking, a kind of cotton cloth originally made in the Chinese city of Nanking from a yellow variety of cotton, but now made from white cotton dyed yellow.

The Nankeen Night Heron mentioned is not uncommon in this district. Groves or plantations of tall pine trees seem to be favourite roosting places of these birds. Members of this Club inspected one such site on Mr. O'Halloran's property at Leopold about two years ago.

The Nankeen Kestrel is perhaps a better known bird with this colouring. It is often seen hovering over grassland in search of insects or mice. This member of the falcon family is sometimes misnamed Sparrow Hawk.

*****

Some early issues of the "Geelong Naturalist" are still available; enquiries for back numbers can be made through the Editor or Secretary.

*****

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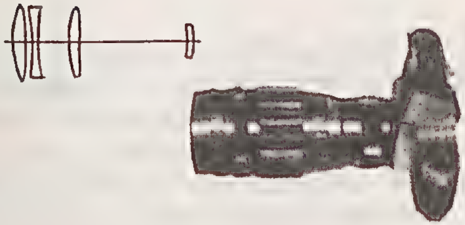

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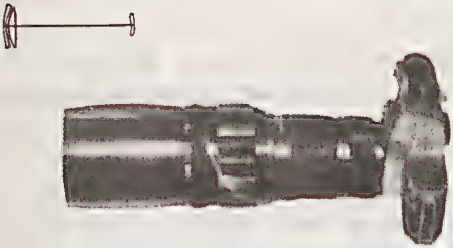

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"THE IMPORTANCE OF LEAVES"

By L.G. Elms, Belmont

The leaves of trees and other flora are of great importance, not only to mankind, but to the trees and shrubs themselves. Probably the first people to appreciate the importance of leaves were Adam and Eve, but since their day some hundreds of various other uses of leaves have been made. For example there are several milliams of the leaves of the cabbage, lettuce, eucalyptus, tobacco and tea used by us every day. Also in the warmer zones, palm leaves are used for thatching houses and shacks.

Back in 1770, Captain Cook, being very conscious of the need to eat leafy vegetables and fruits to avoid scurvy, insisted on his crew consuming a beverage made by boiling the Leptospermum leaves he had gathered ashore when he discovered Australia. This practice gave rise to the common name of Tea Tree for the Leptospermum, and incidently resulted in him being the first ship's captain to get back to England without having lost a sailor through scurvy.

In Australia we have some 18 million cattle and 158 million sheep on whom, directly and indirectly, we are dependent for our daily existence, but they in turn are dependent for their existence on the leaves of the various pastures.

In the case of the plants and trees, the leaves are virtually a chemical laboratory acting as a kitchen for them. Water with various minerals in solution is taken up by the roots and passed up to the leaves where carbon dioxide is taken in from the air, and energy is taken in from the sunlight. With the aid of chlorophyll which is in the leaves, these elements are then converted into starch and sugar etc. for the nourishment and growth of the plant. In the course of this process the leaves give off oxygen, thereby purifying the air for all forms of animal life to breathe. The leaves also give off large quantities of the water vapour through extremely small pores on the under side of the leaf. There are some thousands of these pores, or stomata, on each leaf, and they act as valves to liberate the right amount of water to control the leaf's temperature under all weather conditions. A large sunflower leaf may give off a pint of water on a hot summers day, whilst an acre of dense beech forest may give off some 200,000 gallons of water, in the form of

"THE IMPORTANCE OF LEAVES" (Cont'd.)

vapour, in one day. It can therefore be seen why the heavy rainfall areas are associated with forest regions, and again why our own existence is dependent on leaves.

The pattern adopted by the leaves about the stem is of such a nature that each leaf may obtain the maximum amount of sunlight from above, and that the lower leaves are not entirely in the shade of the leaves above them.

Fungi are an interesting form of vegetable life which are devoid of chlorophyll, and therefore cannot make food materials for themselves as the normal plants do with their leaves. The fungi must forage for their subsistence from decaying organic matter of all sorts. Lichens are a type of algae which combine with the matted strands of a fungus, and as these contain chlorophyll, they are able to live on sunbaked rock surfaces, where neither algae nor fungi could exist otherwise.

One interesting aspect of the importance of leaves is their assistance to geologists in assessing the age of the earth by studying fossil plants in the numerous rock layers. The oldest forms of plant life were the Algae or Seaweeds, which were followed in turn by the ferns and mosses in the coal formation periods. Then followed a primitive type of general plant growth, which in turn has developed into the trees and palms etc. which are common with us today. One of the most important discoveries of Scott's last Antarctic expedition was a strata containing fossil plants at Buckley Island within 300 miles of the South Pole.

Plants, of course, have to endure the hardships of Winter, and Nature has arranged that the leaves are shed for many of the species in the Autumn. If this did not occur, the leaves could be giving off more water vapour during the Winter than could be replaced by the roots deep down in the cold (and sometimes frozen) soil, and this could result in the death of the tree. With the Autumn shedding of leaves, a suitable balance is restored, and the tree remains dormant until Spring arrives and a new growth of leaves occurs.

"THE IMPORTANCE OF LEAVES" (Cont'd.)

Their usefulness does not end when the leaves fall to the ground, for there they form a carpet over the soil, combined with bark and twigs and other mossy growths. This layer is known as a "Forest Floor", and by controlling the sudden rush of surface water in wet seasons, prevents soil erosion from spoiling our countryside.

The common pattern of leaves on trees in the colder northern countries (e.g. oak, poplar, plane, beech etc.) is to have a shiny upper surface through which the sun's energy is absorbed, and a downy undersurface from which water vapour is given off. The leaves adopt a horizontal position so that these two functions can operate to the best advantage in regions where there is not so much sunlight. But here in our sunny Australia the position is very different, and the leaves of our native Eucalypts hang vertically downward to protect them from taking in too much sunlight. They also contain a eucalyptus oil, the vapour of which is given off in warm weather to restrict the passage of light and heat from the sun, and thus protect the leaves from sunburn.

It is of interest to note that in 1858 the Kyneton Gas Company spent £5,000 on building a gas-works, and produced a gas of first-rate quality from gum leaves.

And so we could go on to explain in hundreds of different ways the extreme "IMPORTANCE OF LEAVES".

*****

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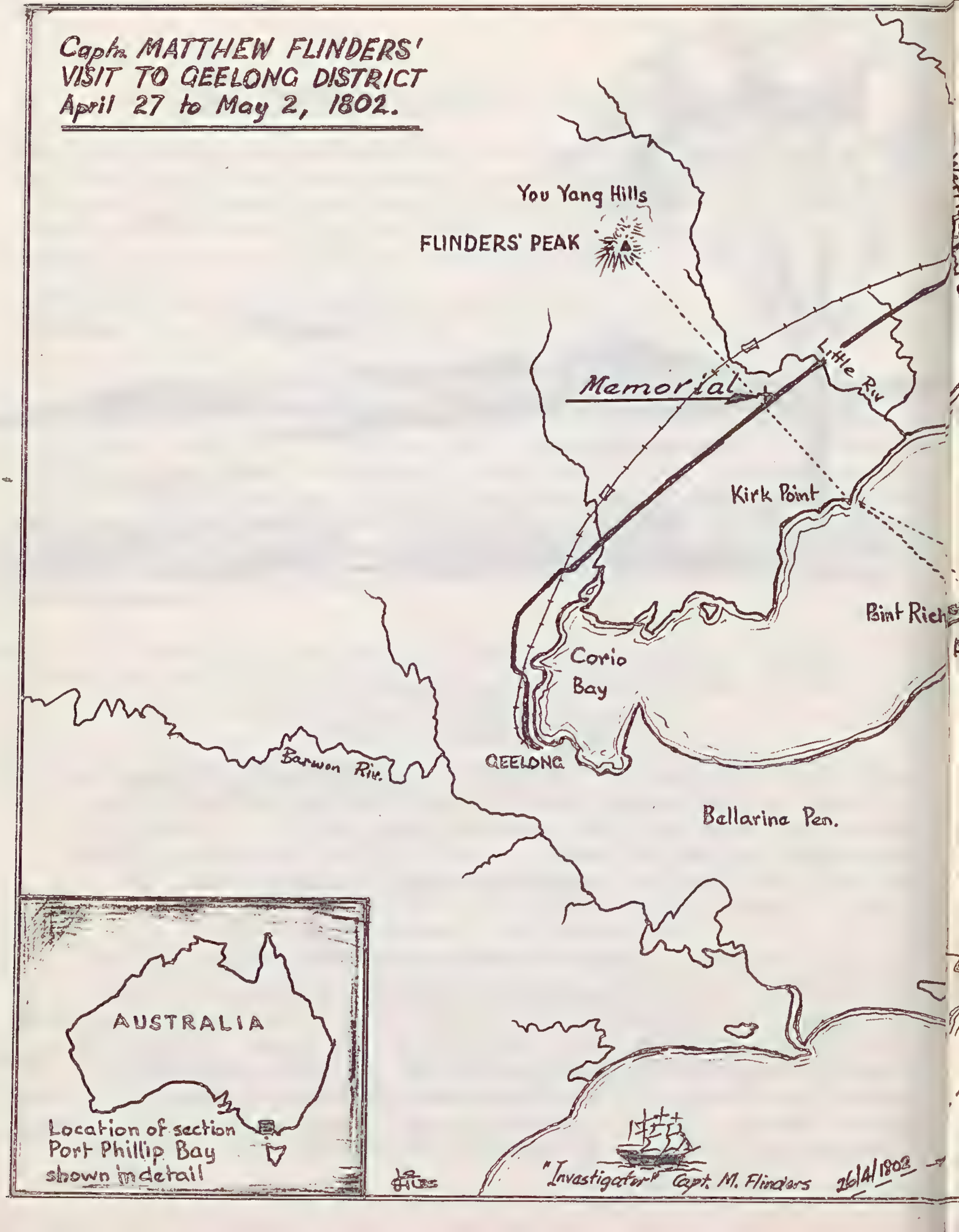
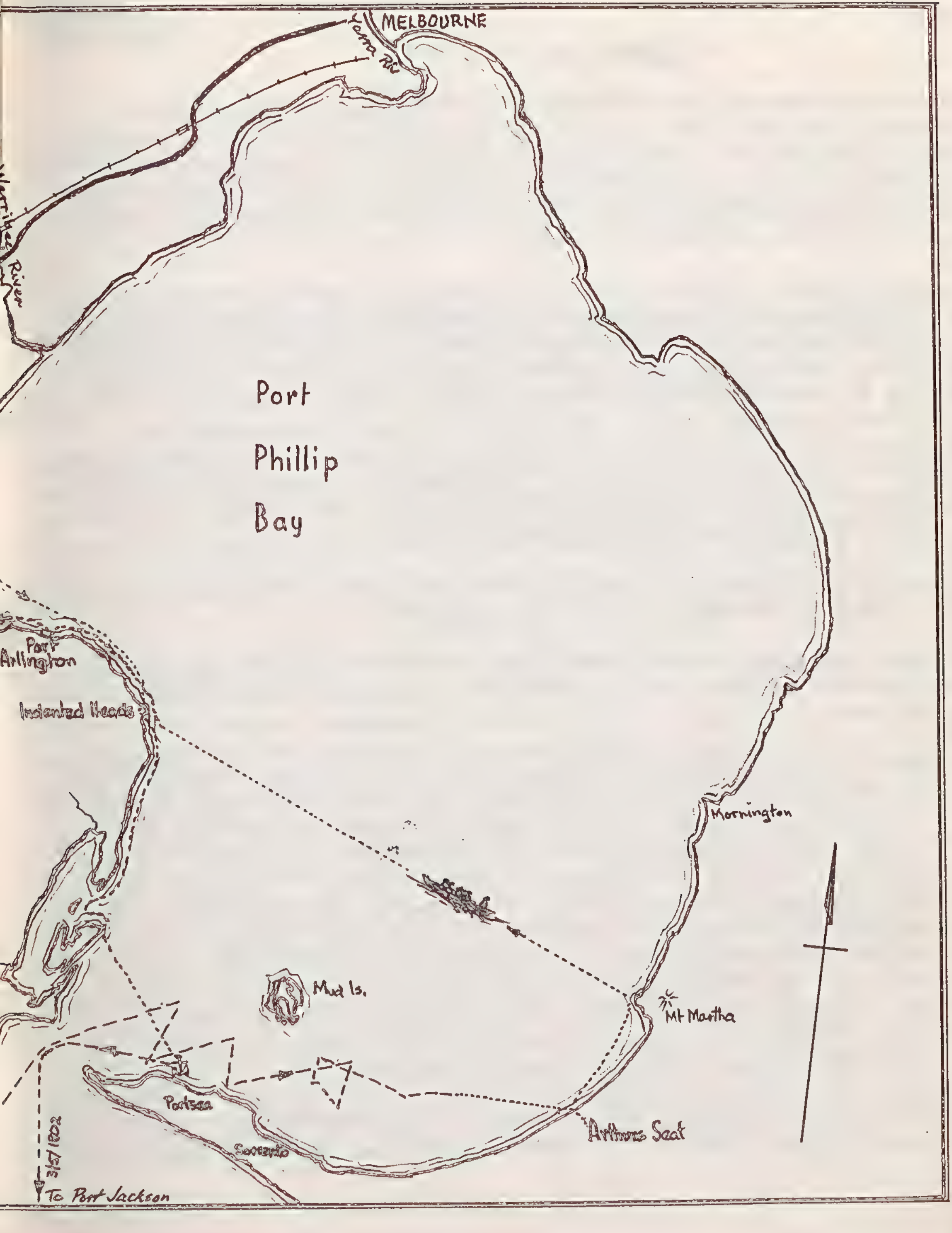
FLINDERS PEAK
By C.J. Gibson, Belmont.

Each day 12,000 eyes are attracted almost mystically towards the You Yangs as the drivers travel between Geelong and Melbourne. In one week then some 100 to 200 thousand people, allowing for passengers and heavier weekend traffic, would have gazed at this solitary land mark and undoubtedly noted Flinders' Peak, the highest point[1] in these hills.

But just how many of them, I wonder, know of the existence of the memorial to Flinders between the 33rd and 32nd mile posts on the lanes to Melbourne[2] for it seems relatively few are distracted from their urge to be there the instant they begin. Perhaps the sense of urgency afflicting present day motorists just doesn't allow time to satisfy curiosity - such privilege belonged to an earlier age of liesure. While I certainly can't claim to be entirely free from such afflictions; on those occasions on which I do stop to



Captn. MATTHEW FLINDERS'
VISIT TO GEELONG DISTRICT
April 27 to May 2, 1802.


MELBOURNE
Yarra R.
Werribee River
Port Phillip Bay
Port Arlington
Indented Heads
Mornington
Mud Is.
Mt Martha
Portsea
Sorrento
Arthurs Seat
3/5/1802
To Port Jackson

FLINDERS PEAK (Cont'd.)

show my children or some visitors I inevitably find myself again wondering just what the countryside looked like before European civilization improved it. That would be well over 100 years ago now. You and I are left to form our own impressions from the writings, sketches, and later, photographs of the first explorers and pioneers who left us such records describing it.

Captain Matthew Flinders was one such explorer seaman, or perhaps we could say, seaman explorer, for he certainly explored and charted for the first time much of Australia's coasts. His were undoubtedly the first eyes to see the Geelong district which he viewed from Flinders Peak as it is now known, or Station Peak as he then named it. That was on Saturday morning, May 1, 1802, after his party had camped the previous night on the shores of Port Phillip Bay not far from Little River. I have heard it said that there is a rock here with markings thought to have been made by Flinders but have been unable to date to verify this. Perhaps a reader has knowledge of this?

His excursion to the You Yangs is best told in his own words which I quote from his "Voyage to Terra Australis."[4]

"At dawn [Saturday, May 1, 1802] I set off with three of the boat's crew, for the highest part of the back hills called Station Peak. Our way was over a low plain, where the water appeared frequently to lodge; it was covered with small-bladed grass, but almost destitute of wood, and the soil was clayey and shallow. One or two miles before arriving at the feet of the hills, we entered a wood where an emu and a kangaroo were seen at a distance; and the top of the peak was reached at 10 o'clock. My position was then 21' of latitude from Point Nepean, in the direction of N 28°30' W and I saw the water of the port as far as N 75° E at the distance of 7 or 8 leagues[3] so that the whole extent of the port, North and South is at least 30 miles. The extremity of the western arm bore S 15°45' W which makes the extent east and west to 36 miles; but there was no communication with the sea on that side, nor did the western arm appear to be navigable beyond 7 miles above where I crossed it. ... and so far the country was low, grassy, and very slightly covered with wood, presenting great facility to a traveller desirous of penetrating inland. I left the ship's name on a scroll of paper, deposited in a small pile of stones upon the top of the peak; and at three in the afternoon reached the tent, much fatigued,

FLINDERS PEAK (Cont'd.)

having walked more than 20 miles without finding a drop of water. Mr. Lacy, the midshipman of the boat, had observed the latitude at the tent from an artificial horizon to be 38°2'22" and Station Peak bore from thence N 47° W. In the evening we rowed back to Indented Head and landed."[4]

They slept the night at Indented Head and on the Sunday (2/5/1802) rounded the Head to Swan Harbour (Pond) and'caught three swans and some delicate teal, and took some bearings.' They then headed straight for the ship which was anchored three miles inside the mouth of the port.

One cannot but admire the enthusiasm and energy of this young seaman[5] even when on land, for he had only entered Port Phillip Bay on April 27. Being unable to sail around the bay because of sand banks he anchored inside Point Nepean towards Sorrento and immediately climbed Arthur's Seat "to gain some knowledge of the form and extent of this great piece of water." He couldn't see the northern limit so took one of the ship's boats with "provisions for three days; in order to explore as much of the port as could be done in that time." The limited supply of provisions remaining was forcing him to limit his stay.

The accompanying map shows the route taken across the bay to Indented Heads which he named "from its appearance." Here he noted "some dry rocks with bushes on them surrounded with mud flats..." The party landed at the north of Indented Heads and took bearings from the brow of a hill a little way back. This would appear to be about where Port Arlington is now. They gave the natives a shag here - perhaps also establishing favourable first impressions with the aborigines that only 20 months later (December, 1803) adopted William Buckley, the escaped convict. From here they proceeded westward until "the water became very shallow abreast of a sandy point[perhaps Point Richards just west of Port Arlington] whence the shore trends nearly S.W.... I steered across the western arm as well to ascertain its depth as with the intention of ascending the hills lying behind the north shore." It was on that northern shore that they camped Friday night and early the following day set off for Flinders Peak as related above.

FLINDERS PEAK (Cont'd.)

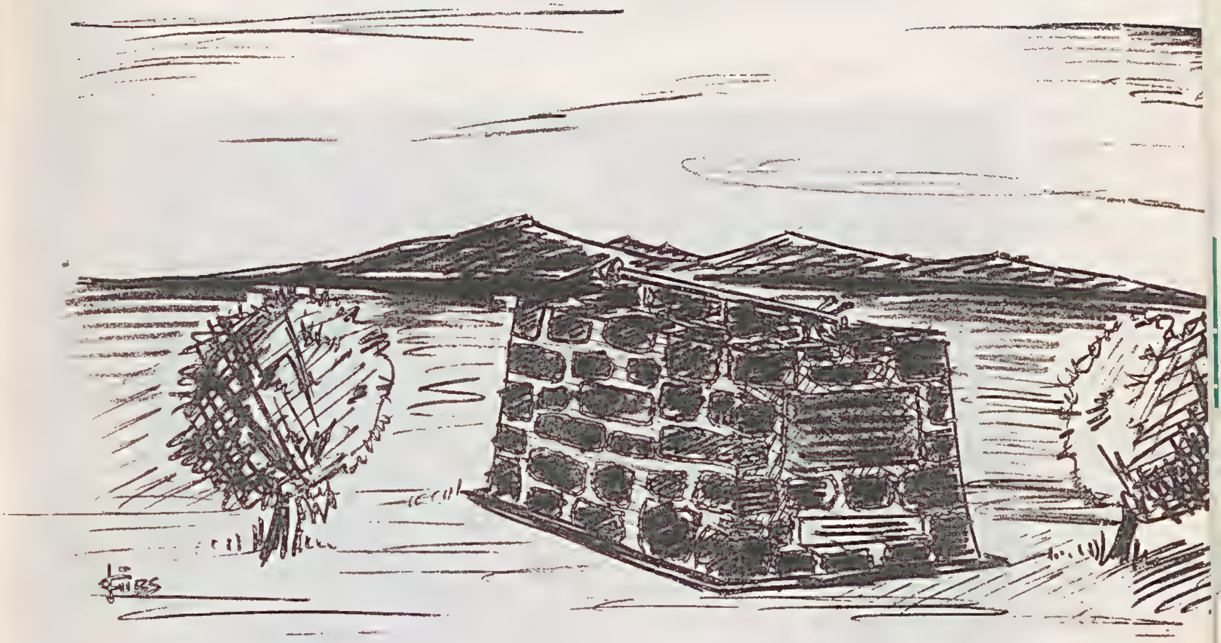
Flinders had noted that casuarina and eucalyptus and most common kinds of wood grew in the district. His botanist (Robert Brown) on board does not appear to have been on this little excursion to the Bellarine Peninsular but no doubt was busily engaged on the Mornington Peninsula during the week the ship was in the bay. What Brown did collect I don't know not yet having enjoyed the privilege of perusing his more detailed accounts of the visit.

On May 3 anchor was weighed at dawn and the H.M.S. Investigator was on its way to Port Jackson and the newly established settlement of Sydney. It was not until Flinders arrival in Sydney that he discovered, no doubt to his disappointment, that he was not the first to discover Port Phillip as he had thought. Lieutenant John Murray had discovered and named Port Phillip only ten weeks before (February 15).

This memorial on the side of the Geelong - Melbourne highway is only one of a great many that perpetuate the memory of Captain Matthew Flinders, the young English sailor and explorer who contributed so much to the knowledge of this new continent, Australia. For those whose curiosity impels them to stop and also to enquire, an intensely interesting human story emerges to catch something of the fading past - a picture of the virgin country with its natural cover and various animal and native inhabitants before their extermination.[6]

For those whose curiosity still remains unsatisfied reference to some of the following might help:

Flinders, Matthew, A Voyage to Terra Australis, 1801 - 3 in H.M.S. Investigator, G. & W. Nicol, London, 1814, Vol. 1 & 2 and charts. Australian Facsimile Editions No. 37, Libraries Board of South Australia, Adelaide, 1966.
These large volumes contain a complete detailed account written about ten years afterwards in England. As no copies of this valuable work were available in Geelong I had to borrow a set from the State Library of Victoria in Melbourne. Although it includes a rather long academic introduction giving the history of previous exploration and in the contents rather too much nautical detail, this book is obviously the authoritative source concerning Flinders exploration.



FLINDERS PEAK (Cont'd.)

Scott, Ernest, "The Life of Captain Matthew Flinders, R.N."
Sydney, 1914.
Although many books have been written about Flinders this was one of the first and is still perhaps the most comprehensive and adequately documented.

Austin, K.A., "The Voyage of the Investigator, 1801-3." an interesting and useful account published for the Adelaide Festival in 1964.

Some readers might be interested in the analysis or interpretation of Flinders' character and his actions as given by such authors as: Ernestine Hill in "My Love Must Wait", Sidney Baker's "Mine Own Destroyer", or James D. Mack's "Matthew Flinders, 1774-1814".

*****

FLINDERS PEAK (Cont'd.)

References:

1. The height of Flinders Peak or Station Peak, for both names are used on the maps, is on some given as 1132' and on others 1154'. The reader can take his pick or check the official height as recorded on the Peak on his next climb.

2. That is not far past the Avalon turn-off and just before the Little River turn-off travelling to Melbourne from Geelong.

3. A league is a varying measure but usually taken as about three miles

4. Flinders, M., "Voyage to Terra Australis", page 216.

5. He would be 28 years of age having been born March 16, 1774. He was born at Donington, Lincolnshire, England, and was the eldest of seven children. He completed his schooling at the age of 15 and entered the Navy.

6. William Buckley who lived with the aborigines as one of them in the Geelong district from 1803 to 1835 is according to his amanuensis John Morgan, supposed to have said prophetically, "... the native knew nothing of the value of the country, except as hunting grounds. I therefore looked upon the land dealing.. as another hoax of the white man, to possess the inheritance of the uncivilized natives of the forest, whose tread on the vast Australian Continent will very soon be no more heard, and whose crimes and sorrows are fast fading away amongst other recollections of the past." Morgan, J., The Life and Adventures William Buckley, first published 1852, republished by Heinemann Ltd., 1967, page 88.

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OUR WINTERS SPELL DEATH TO OUR OWLS

By Jack Wheeler, Belmont.

Boobook Owl Nestling (Drysdale)
Photo by J.R. Wheeler.

For many years, naturalists have shown concern at the toll of many owls which, for some unknown reason, die during very cold snaps during the winter months. To date, there appears to be no conclusive answer as to why they should die.

Early last winter I was asked to identify an owl which had been roosting in the garden of a home at Newcomb, east of Geelong.

The garden was spacious and the roost tree was a small eucalypt situated near the entrance gateway. The morning I arrived to see the bird, I was told by the owner that the bird was found the previous evening by the children, fluttering its last and by dusk the bird had died.

OUR WINTERS SPELL DEATH TO OUR OWLS (Cont'd.)

I examined the bird closely. It appeared to be fully plumed and an adult bird which I identified as a boobook owl. The plumage was a rich chestnut brown with well marked under parts. There was no evidence of injury nor was there any trace of food in the stomach, and the bird was extremely poor. Visiting the roost tree, there were very few fresh 'pellets' of undigested particles which are regurgitated by birds of prey. Most were dry and had been there quite some time. The particles revealed the bird had been feeding on small birds such as sparrows and silvereyes. There was no fur in the pellets suggesting that mice were being caught.

The basic food of owls in this district would be mice, lizards, large nocturnal insects and small birds. Just prior to the death of this bird, I had examined the roost tree of another boobook owl at the Geelong Botanic Gardens. Here, there was an abundance of pellets on the ground, and indicated by their freshness that there was no shortage of food in that particular area as was probably the case with the Newcomb bird. Two nights prior to the death of the Newcomb bird, two severe frosts were experienced.

During this last winter I examined another boobook owl at Leopold and in this case the bird had no visible injuries, and was also in an extremely poor condition. This was the day before the Newcomb bird died and a day following a heavy frost.

Previous years it has been mostly barn owls that have been found dead. In such cases, the examination has always been the same, no injuries and extremely poor in condition.

What then is the answer to this problem?

Some research was carried out on dead owls by the Walter & Eliza Hall research medical team. The result revealed nothing - no virus, no bacterial disease, no poisoning.

In the study of biology there is an interesting rule - Bergman's Rule - where a single species or a number of closely related species, of warm-blooded birds and animals, cover a very wide range of latitude the larger individuals are always found to be in the colder latitudes.

OUR WINTERS SPELL DEATH TO OUR OWLS (Cont'd.)

As winter approaches in southern Australia, we humans change to our winter clothing and at the same time we eat more in order to generate and retain more body heat to offset the loss of heat as the temperatures drop. Birds and animals do the same. After the autumn moult, they too take on their coats of winter feathers and fur, and at the same time more fuel must be generated by the taking of more food.

The smaller the creatures the greater the loss in heat because they have a greater radiating surface in proportion to their bulk.

Our barn owl is a cosmopolitan bird and is found the world over. Our boobook owl occurs all over Australia and may be found also in New Guinea. Both, as far as we know, have no set pattern of migration. Both are very nomadic in their movements. A barn owl, banded as a juvenile in its nest in the East Geelong 'Drive-in' screen in January 1963 was caught in a rabbit trap 21 months later at Baruta (S.A.) on Spencer Gulf.

Owls that move southwards into central and southern Victoria, and to be suddenly caught in our winter with a very restricted food supply, would certainly soon lose condition and become poor. In a weakened condition they could succumb to a sudden temperature drop.

We could argue that in some inland areas such as Central Australia where night temperatures can often drop lower in winter than any any experienced in central and southern Victoria, and there appears to be no similar mortality there. On the other hand there would certainly be a better supply of general food in inland areas.

Some would say - why don't owls migrate like so many other species do or better still why come at all?

Evolution is a very slow process and the slightest change in behaviour may take centuries. The simplest solution appears for nature to evolve larger and more robust owls to counter the rigours of our changeable climate but in the meantime all we can say is that our present owls are just not fit enough nor are they big enough to really take it.

*****

AT RANDOM

HONEYEATER TRAPPED IN FOODSTORE: by Jack Wheeler.

Shopping recently in the S.S.W. Foodstore at Belmont I noticed aabird flying high above overhead advertising signs. At first I thought it a cunning sparrow doing some indoor raiding as sparrows often do. On viewing the bird closer, I recognised it as a Yellow-faced honeyeater. The bird was certainly not at home, inside a foodstore of this size and how it gained admittance is rather a mystery as all upper windows were sealed.

I questioned the attendant about the bird and she said the bird was first noticed the day before and they had hoped it would gain its freedom through the wide entrance doors. This was very unlikely to happen as the bird continually remained near the ceiling of the buildin and showed no inclination to move down to door level.

I then asked permission to revisit the store at closing time as during the day, the store was crowded and not a very convenient time to endeavour to net the bird. So at closing time I arrived with a long-handled fishing net and as soon as the store was closed, I went to work with my net. The bird was showing evidence of tiring after its two days indoors without food. However, after several unsuccessful attempts to net the bird, I got an attendent to wave a straw broom in front of the bird each time it perched whilst I held the net at the ready immediately at the rear of the bird. This time I was successful in netting it and I wasted no time in releasing it in a shrub at the Police Station almost opposite, as it was already almost dark. The bird did not show any signs of panic as I held it gently in my hand. What frail creatures these small honeyeaters are, and yet they have untiring energy as they flit from branch to branch and from tree to tree in search of fo

I feel sure that this particular bird won't want to visit a foodstore anymore and its night in the police yard, would give it added protection until first light the next day when it would be on its way in search of a much needed meal of insects and nectar.

AT RANDOM (Cont'd.)

DEAD RUFOUS FANTAIL - ROBIN WINDOW CRASHING: by Rev. Father Eames, Ringwood.

On 27th March of this year, I was surprised to find a dead bird which I identified as a Rufous Fantail, in the backyard of a home situated near the corner of busy Ballarat Road and Church Street. It had been dead about a week and there appeared to be no injuries.

(Each year reports come in from various parts of Geelong about that time of the year, of Rufous Fantails visiting gardens. However they do not remain very long, which indicates a migratory movement, no doubt a northward movement from the Otways where they breed each year.)

On 16th June this year at Ringwood I was intrigued to see a Scarlet Robin fighting its own reflection in the window of a suburban house. Is this unusual?

(Many birds fight their own reflection in windows. I have seen Magpie Larks persistently attack reflections in chrome wheel caps on cars until they themselves become quite bedraggled with their repeated efforts. In a letter recently, from Invermay near Ballarat, a lady observed a Scarlet Robin (female) fly into her lounge window with fatal results; it had broken its neck.)

UNUSUAL VISITORS TO ADDISCOT - TORQUAY: by Tim McKellar, Addiscot.

During the period 29/31 March this year, was a real letter in my home garden. First of all there were visits by two of the finch family - the Diamond Firetail and Beautiful Firetail, both species I had not seen in this district for several years. To cap this off, an Olive Whistler graced us with its presence. Even though this species is resident in this district, their visits to my garden are rare.

Later in the year, early in June, imagine my surprise when I noticed two strange lorikeets on the top of my own aviary. Examining them through my binoculars, I was amazed to identify them as a Rainbow Lorikeet and a Scaly Breasted Lorikeet. Wheeler's "Handlist of the Birds of Victoria" does not list the Scaly Breasted Lorikeet for this State - were they caged escapees? -- Your guess is as good as mine.

AT RANDOM (Cont'd.)

LONE EGRET IGNORES TRAFFIC: by Jack Wheeler.

Daily travellers over the busy Barwon Bridge have become well aquainte with a lone White Egret which has graced the small lagoon beside the southern approach of the Barwon River Bridge, Belmont.

This bird first arrived early last February and as I write these notes in July, this bird is still with us. Over four months now we have watched its tactics with interest. There are times when it is stationary, with a very hunched and dejected appearance, then on other occasions it is wide awake and alert, with its long neck outstretched in search of aquatic creatures. We call it 'Snow' because of its pure white plumage and everybody refers to it in the male gender - he or him whichever suits but then nobody is sure - it could quite easily be a she!

However, Snow is quite at home and rarely leaves his own small domain. Photographers have disturbed him at times but he always returns. One photographer told me that Snow was feeding on small fish, no more than two or three inches long. During the recent very dry autumn which turned out to be the driest on record, we became very concerned for Snow as the lagoon became shallower and shallower until the area of water was only half the size of a normal suburban back yard.

We expected each day to see Snow gone, but he remained. The June rains were very welcome and now the lagoon is back to its normal size and Snow has much more feeding ground to cover. Earlier this year he had six companions - Cattle Egrets - all in breeding plumage but they only remained a few hours. At times, Snow looks very lonely, being the only inhabitant but each day now there are Silver Gulls and Spur-winged Plovers in attendance. Of late, we have noticed how elegant his plumage has become since the autumn moult. Soon Snow will be making his way north in search of a mate as the breeding season approaches - we wonder. However, we have enjoyed his stay and whether it be male or female, we will always admire his or her choice of a busy thoroughfare as his feeding ground.

AT RANDOM (Cont'd.)

THOSE BLUE BUTTERFLIES: by F. Pannell Leigh.

From "The Wonders of Life on Earth" published by Time Inco., Life Book Dep. 1960.

Blue Butterfly and the Ants.

The life cycle of the large blue English butterfly is shown in color. The butterfly wings at rest measuring 1-1/2 and 1-2/10 inches and in flight, diagonally across 3-1/10 X 2-9/10 inches.

"In June the larva hatches on the wild thyme bushes and for about 20 days feeds on the flowers and other larvae." (Does this indicate that it is is its own enemy?) "After moulting the larva stops eating and wanders about aimlessly. At this point ants gather about the larva stroking its honey gland with their antennae and drinking the sweet droplets it gives off. Finally one ant picks the larva up in its jaws and carries it underground to the nest. Here the larva feeds on ant grubs and continues to yield honey whenever the ants stroke it. By winter the larva has become four times its original size and has gone into hibernation. The following spring it becomes active again and encases itself soon into a cocoon. In May a butterfly emerges and makes its way above ground where it spreads its wings and flies off to lay eggs."

Blue Butterfly and the Ants - measurements -

The ant 7/10 in. the ant grub 5/10 in.
The larva when captured and carried off 7/10 in.
The winter larva in hibernation (4 times original size) 2 in.
The cocoon 1-6/10 in. after emergence of butterfly.

If our Cuthbertson sited Small Ant Blue butterfly is similar to this English one, these illustrations, even if enlarged, justify those who worked so enthusiastically to preserve the area.

*****

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FOR BOOKS ON NATURAL HISTORY.

JUNIOR PAGES

In this issue of our Journal, we have some rather interesting questions which will really test your knowledge of natural history. Do not be too disappointed if you do not know all the answers - very few senior members would either. But use the quiz as a guide to further reading, and see if you can learn more than is given by the answer.

The questions are:

1. One of these is different from the other two. Which?
   (a) Echidna (b) Koala (c) Platypus

2. The Bower Bird builds its bower
   (a) as a decoration (b) to use as a nest (c) as a playground

3. The Koala has an unusual appendix. It is
   (a) 2 inches long (b) 2 feet long (c) 6 feet long

4. A Marsupial has
   (a) strong hind legs (b) a pouch (c) long ears

5. Father Magpie differs from Mother Magpie in this part of Victoria because he has
   (a) a black back (b) a grey back (c) a white back

6. The Grass tree is known as The Bushman's Compass because
   (a) the flowers die on the south side first (b) its shadow always points east (c) the flowers come out on the north side first.

7. The male Blue Wren moults and loses his color every winter until he is
   (a) 4 years old (b) 5 years (c) 7 years

8. A spider has
   (a) 6 legs (b) 8 legs (c) 12 legs

JUNIOR PAGES (Cont'd.)

9. You can tell the female Scarlet Robin because she has (a) more red than the male (b) less red than the male (c) no red at all

10. You can tell a male Scarlet Robin from a male Flame Robin because the Scarlet has
(a) a white tail (b) a black throat (c) no white spots over the eyes

11. A butterfly's wings are different from a moths because (a) there are 6 of them (b) they stand up together when at rest (c) they are prettier

12. Which one of these lays its eggs on the ground?
(a) Blue Wren (b) Spurwing Plover (c) Wedgetail Eagle

13. Before it becomes a butterfly, a caterpillar becomes
(a) a cripple (b) a crystal (c) a chrysalis

14. One of these is found only in Australia
(a) White swan (b) Black swan (c) Skylark

15. A Kangaroo could
(a) travel at 60 miles an hour (b) be as tall as a man (c) jump over the moon

16. Young Naturalists should
(a) Collect as many birds eggs as possible (b) take only one egg from each nest (c) never collect birds eggs at all

17. One of these is NOT depicted on our present mixed coins. Which?
(a) Glider (b) Lizard (c) Koala (d) Platypus (e) Emu
(f) Echidna (g) Kangaroo

18. Australia has many different Eucalypts. There are more than
(a) 100 (b) 250 (c) 500

JUNIOR PAGES (Cont'd)

19. The letters G.F.N.C. stand for
    (a) Good For Naughty Children (b) Grand For Nice Children
    (c) Geelong Field Naturalists Club

Now, remember that these questions are hard - the answers are given at the bottom of this page.

The Editor has received two letters from Juniors at Mannerim School. The first is from Belinda Mac Donald (age 9 years) who writes - "Last Saturday morning when I went to feed our ponies a tall, long-legged grey bird was by the water-hole. Since then I have seen it several times, and we think it may be a curlew, because at night we hear curlews calling down that way and in our plantation."

Actually, the grey bird would probably be the White-faced heron; it is very good to know there are still some Curlews (or Stone plovers) so close to Geelong.

The second letter comes from Andrew Belfrage. "In a tall eucalyptus tree in our school ground a tawny frog-mouth has its nest. The nest consists of a few fine twigs or coarse grass in a fork of the tree and the bird sits almost straight up, so that it looks very like a broken piece of limb. One has to look very closely to be sure that it is really a bird.

Last year the frogmouth nested in the same place, and the two young birds stayed with the parent birds all the year, but we have not noticed them just lately. Frogmouths have nested in the playground for many years."

It is a fine tribute to the teacher and students at Mannerim school that these birds should nest there so freely - can any other school do better than this?

The bird in the photograph on Page 64 of the July Naturalist was the Yellow-faced Honeyeater - more about this bird in the next issue.

ANSWERS:

1b....2c....3c....4b....5c....6c....7a....8b....9b....10b....11b....
12b....13c....14b....15b....16c....17c....18c....19c.

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Hon. Secretary:
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(Phone: 8 7393)

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Excursions Secretary:
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(Phone: 21 1385)
Mr. E.G. Errey, 3 Leonard Street, Belmont.
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Mr. I. Woodland, 33 Grant Street, Newtown.

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Published by

THE GEELONG FIELD NATURALISTS CLUB

Geelong Victoria

The G.F.N.C. meets on the first Tuesday in each month, at 8 p.m. at the Reformed Presbyterian Church Hall, Fenwick Street, Geelong.

Visitors Welcome

All papers submitted for publication in this journal should be sent to the Hon. Editor.

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Ken Jenkin — Printer, Geelong

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VOL. 4 NO. 4. JANUARY 1968 PRICE 25c

GEELONG NATURALIST

GEELONG FIELD NATURALISTS CLUB

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JOURNAL OF THE GEELONG FIELD NATURALISTS CLUB

Registered at G.P.O. Melbourne, for transmission by post as a periodical

Hon. Editor: Trevor Pescott

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

MEMBERSHIP

Membership of the G.F.N.C. is open to any person interested in Natural History. The 'Geelong Naturalist' is distributed free to all members, and the Club's reference and lending library is available.

Subscription Rates are:
(Due on 1st April)

	Per Annum
Adult Membership	$2-00
Joint Membership	$3-00
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Subscription to Magazine	$1-00

COVER PHOTOGRAPH

A pair of Grey Currawongs at their nest.

by R.G. Mackenzie.

GEELONG NATURALIST

Vol.4. No.4. January 1968.

EDITORIAL

With this issue of Geelong Naturalist, the last of Volume 4 and the 16th of this series, comes an index to cover these first four volumes. It is largely by the work of Mr J. James, formerly of Bellbrae and now teaching at Hamilton, that this index has been compiled, and many thanks are due to him for the work he has put into it.

- - - - - - - - - - -

It is timely, too, to review the past four volumes, to look back through 512 pages, and consider if we are achieving the aims of the Journal; these aims are, I believe, to provide an outlet for naturalists in Geelong to record their observations and write of their natural history experiences locally and in distant areas, and to gather together material relevant to Geelong.

Have we succeeded in these aims? That is for you, the reader to judge!

But whatever your comments, I would gladly receive them - hopeful that they are favourable, yet ready to accept criticisms.

My own thought is that the general, descriptive matter has dominated a little too heavily - that we need more constructive, original observations. With your help, this can be remedied - but I must stress, the remedy is up to you to provide.

Photographs, in glossy, contrasty black-and-white prints, are particularly welcome to "boost" the articles.

TREVOR PESCOTT,
Hon. Editor.

GEELONG FIELD NATURALISTS CLUB'S VISIT TO HALL'S GAP
Third Field Outing - October 27th, 28th & 29th 1967.

These outings have become very popular as is evident by the record number of members that journeyed to Hall's Gap for our third 'Field Outing'.

Our accommodation was taxed to the limit, and the overflow took the advantage of staying at guest houses and motels, whilst some camped.

The main party was accommodated at 'Norval' and the 'Youth Camp', both under the control of the Methodist-Presbyterian Conference Centre Both were sewered and hot showers were available. Some of the family groups 'did' for themselves at the Youth Camp whilst all others took the advantage of the reasonable catering and had their meals at Norval

At Norval, members were rostered to 'set tables', 'wait on tables', 'wash-up', 'fill woodbox' etc. and all carried out their duties with incredible willingness and efficiency.

The assistance, on our excursions, extended to us by members of the Stawell Field Naturalists Club, was most gratifying and to them we must extend a special 'thank you'.

Our intinerary was as follows:
Saturday morning: Car trip along Mt. Zero Road. Walks in scrub and heathlands to study birds and wildflowers.
Saturday afternoon: Short car trip to turntable for 'Wonderland' hike Many reached the 'pinnacle' despite the blustery conditions. Photographic studies, rock formations and wildflowers.
Saturday evening: Assembly at Norval. Welcome by Club President. Film night on 'The Grampians' presented by Mr I. McCann (President of Stawell Field Naturalists Club) assisted by Mr. Barrett. Supper.
Sunday morning: Mt. William per car. Walk to summit. Magnificent views and great variety of wildflowers. (Prior to breakfast three parties visited Fyans Lake, McKenzie Falls and Victoria Valley).
Sunday afternoon: Visit Jimmy's Creek, Miranatwa Gap and Dunkeld. Depart for Geelong.

Thanks: My sincere and personal thanks to our Committee who organised this trip, to all those members who made transport available, and for co-operation generally.

GEELONG FIELD NATURALISTS CLUB'S VISIT TO HALL'S GAP
(Cont'd.)

Photo by O. Andrews.

Personnel List: 'Norval': Mr. O. Andrews, Miss M. Arthur, Miss G. Buckland, Miss I. Buckland, Mrs. B. Campbell, Phillip Campbell, Mr. G. Carr, Mr & Mrs E. Errey, Miss R. Errey, S. Errey, Mr & Mrs N. Gillham, Miss L. Hill, Mr & Mrs J. Hunt, Mrs. G. Layland, Mr & Mrs C. Ling, Mrs H. Lomas, Mr & Mrs A. Lonsdale & family, Mr G. Mathison, Miss M. Parks, Mr & Mrs H.B. Pescott, Mr & Mrs T. Pescott & family, Miss E. Poole, Miss F. Poole, Mr & Mrs N. Povey, Mrs B. Quirk, Mrs Singleton, Mr & Mrs L.W. Vincent & family, Mr J.R. Wheeler (President) & Mrs. Wheeler, Mr L. Wilkinson, Mr I. Woodland, Mrs F. Yoeman.

Youth Camp: Mr & Mrs W. Anderson, Mr & Mrs G.N. Earp & family, Peter Houston, Mr & Mrs H.E. Jennings & family, K. Koppelaar, Mr D. Marsh, Miss R. Marsh, Mr G. McCarthy (Secretary), Mr & Mrs W. Raynes & family, Miss K. Stoddart, Lee Sullivan, Mr & Mrs Whiteside & family.

Rocklyn-Guest House: Mr & Mrs B.R. Keith, Miss I. Laugher, Mr & Mrs R. Sherwood, Mr & Mrs J. Whitmore.

GEELONG FIELD NATURALISTS CLUB'S VISIT TO HALL'S GAP
(Cont'd.)

Motel: Mr & Mrs F.W. Grueber, Helen Grueber, Rosemary Grueber, Mr & Mrs O.A. Usher.
Camping Ground: Mr A. Chapman, Mr G. Gayner, Miss J. Gayner, Mr & Mrs Memmott, Mr C. Tingate.

JACK WHEELER,
President.

*****

BIRDS SEEN DURING THE HALL'S GAP CAMP
List by Trevor Pescott & Geoff Vincent

The main areas visited during the Campout are listed in the President' report (Page 98) of this issue; however, on the morning of the 29th one car load of ornithologists led by Mr J. Wheeler visited Lake Fyans and there added many birds not seen elsewhere. The wide variety of habitats within easy reach of Hall's Gap makes the listing of birds fairly easy - never-the-less, the list of 87 species is an excellent one.

The birds seen, with brief notes, are as follows:-

Emu: Few seen in various parts of the Grampians.
Common bronzewing: Not common, a few only being seen.
Coot: Huge rafts of these were seen on Lake Fyans, many thousands being present.
Little grebe: Common and scattered on Lake Fyans.
Hoary-headed grebe: Quite plentiful on Lake Fyans.
Crested grebe: A few only seen on Lake Fyans.
Black-fronted dotterel: Five birds seen on the Lake Fyans shores.
Spur-winged plover: Numerous pairs were seen generally near water.
White-faced heron: Single bird seen in several parts of Victoria Valley.
Royal spoonbill: One seen in Victoria Valley.
Yellow-billed spoonbill: Several birds seen at Lake Fyans.
White ibis: About 100 birds seen in a paddock near Lake Fyans.
Little pied cormarant: Common on Lake Fyans.
Little black cormarant: Common on Lake Fyans.
Black cormarant: Several on Lake Fyans and at other water.

BIRDS SEEN DURING THE HALL'S GAP CAMP (Cont'd.)

Black swan: Very plentiful on Lake Fyans.
Mountain duck: Three birds only were seen.
Black duck: One pair seen.
Grey teal: Several seen on the lake in Victoria Valley.
Musk duck: One only was seen on Lake Fyans.
Swamp harrier: Recorded from near the lake in Victoria Valley.
Wedge-tailed eagle: Seen in several areas.
Whistling kite: A few only seen in the open areas.
Brown hawk: Recorded in several areas over grasslands.
Peregrine falcon: One bird had been roosting in the cliffs behind the guest house; it was seen on several occasions.
Yellow-tailed black cockatoo: Quite common in the timbered areas.
Gang-gang: Heard and seen in several areas.
Galah: Small flocks seen over the grasslands.
White cockatoo: Quite common in several areas.
Long-billed corella: One flock only was seen near Hall's Gap.
Cockateil: A flock of 8 birds seen near Lake Fyans.
Eastern rosella: Quite common.
Crimson rosella: Very plentiful in timbered areas generally.
Red-backed parrot: Small flocks seen along the roads through open areas.
Purple-crowned lorikeet: A small flock flew over Lake Fyans.
Kookaburra: Quite common throughout the area.
Golden-bronze cuckoo: Several heard calling and seen.
Fan-tailed cuckoo: Quite plentiful in most areas.
Welcome swallow: Common; a nest was in use, built in the rafters of the shelter at "Wonderland".
Tree martin: Several small flocks seen around dead red gums.
Restless flycatcher: Recorded from several timbered areas.
Jacky winter: Only a few seen in the lightly timbered areas.
Grey fantail: A common species throughout.
Willie wagtail: Common generally.
Scarlet robin: Seen in several areas.
Flame robin: Several seen; an empty nest found in a road cutting near Mt. William.
Yellow robin: Quite plentiful throughout.
Rufous whistler: Seen and heard in most areas.
Golden whistler: Favoured the gullies and denser timber; not common.
Grey thrush: A common bird in all areas.

BIRDS SEEN DURING THE HALL'S GAP CAMP (Cont'd.)

Mudlark: Common, nesting; one male bird made repeated attacks on children in the camping area at Hall's Gap, hovering and clawing at their heads.

Eastern shrike-tit: One heard calling near Hall's Gap.

Little cuckoo shrike: Two seen near Lake Fyans.

Black-faced cuckoo-shrike: Not common; seen in several areas only.

White-winged triller: One seen near Bellfield.

White-fronted chat: A few seen near the lakes.

Brown thornbill: Common in undergrowth in the timbered country.

Striated thornbill: Common in timbered areas.

Reed warbler: In the reeds around Lake Fyans.

Blue wren: Very plentiful in all areas visited.

Dusky wood swallow: A few only were seen.

White-throated tree-creeper: Common in timbered areas.

Brown tree-creeper: Heard calling near Lake Fyans.

Eastern striated pardalote: Common; nesting in a tree hollow in Hall's Gap.

Spotted pardalote: Common in several areas.

White-browed scrub-wren: Recorded in the undergrowth in several areas.

Yellow-faced honeyeater: Common along the creeks.

Crescent honeyeater: Quite plentiful in the timbered areas.

White-eared honeyeater: Found in heathland and along the gullies.

White-naped honeyeater: Common in the timbered areas particularly where eucalypts were flowering.

Yellow-winged honeyeater: Common in most areas visited.

Brown-headed honeyeater: Seen and heard calling in timbered areas.

Tawny-crowned honeyeater: Several seen in the heath along the Mt. Zero Road.

White-plumed honeyeater: Seen in red gums near Hall's Gap.

Eastern spinebill: Quite common in the heathlands.

Noisy miner: Found in red gums near Lake Fyans.

Little wattle-bird: Seen and heard in several areas.

Red wattle-bird: Quite plentiful throughout.

Pipit: Seen in grasslands.

Red-browed finch: Small flocks seen along the creeks.

Grey currawong: Recorded in several areas.

Pied currawong: Common in most areas.

White-backed magpie: Common.

Raven: Common in most areas.

Goldfinch: Quite plentiful generally.

Starling: Common, nesting in dead red gums.

NOTES ON THE GRAMPIAN'S FLORA - PART 1

By Alan Lonsdale & Geoff Carr

The Grampians is an area of great botanical richness, and was an excellent venue for the 1967 weekend excursion. In the Grampians occur over seven hundred and seventy species of flowering plants and ferns, more than one third of the total Victorian flora, and of these, greater than twenty are endemic, occuring nowhere else in Australia.

The reason for the richness of the flora is to be found in the geology of the ranges. The whole formation is sedimentary sandstone, varying in texture from fine grained freestone to rough sandstone. These sediments were laid down in a carboniferous sea approximately two hundred and fifty million years ago. After extensive faulting and erosion, followed by uplift and further erosion which removed much of the softer surrounding rocks, rugged mountains resulted, having a general slope to the west, and abrupt escarpments exposing the fractured beds to the east. The result was virtually an island of sandstone hills rising above the surrounding plains, in which the highest peak now is Mount William, being 3829 feet above sea level. Further weathering and erosion gradually produced from the sandstone a rich soil, upon which the vegetation began to develop and thrive.

Although well inland, the Grampians display many coastal features, for, approximately twenty million years ago the surrounding plains were covered by marine waters, so that the ranges extended out to sea as promontories, and on these, coastal flora became established. Some of this flora still persists, notably Banksia integrifolia (Coast Banksia), which may be observed at and above the 2000 foot contour. The richness of the flora is therefore due to isolation; the isolation of an area of sandstone particularly suitable for the growth and development of plants in an area of comparatively less suitable soil, and, for a period, its isolation by inland seas. Consequently, a number of plants unique to the area have developed.

The slow weathering of the hard sandstone, and the variety of geological formations within the ranges has resulted in the development of a variety of habitats, each with its own characteristic flora. These range from alpine regions, fern gullies, heathland and swampland to quite arid mallee to the north. As the following account shows

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

examples of several of these types of habitat were visited during the weekend.

The Grampians were discovered by Major Mitchell in July 1836 while on his famous overland explorations. Because of their resemblance to Scottish ranges of the same name, he named this impressive range of mountains the Grampians. During his visit he collected the first botanical specimens from the area. In the 1850's, Baron Von Mueller collected and identified a large number of species. At later times the area was studied by the botanists Sullivan, French, Walter, Williamson, D'Alton and Audas, all of whom discovered new species, an after some of whom plants are now named.

It was notable that on this visit the entire area was extremely dry. By way of comparison, in November 1966, a considerable amount of surface water was in evidence in the Victoria Valley; in October 196 in the same area many plants were observed to be wilting from the lac of rain. Quite large plants on the north side of Mt. Zero were badl wilted. Nevertheless, there was still much to see of botanical interest, with a large number of plants in flower.

Three main visits were made. On Saturday morning (October 28th), heathland areas along the Mount Zero Road, between five and ten miles from Halls Gap, were visited. The same afternoon the party walked along the Wonderland track to the Pinnacle, and on Sunday morning Mount William was ascended. In addition, at various times on Sunday, some members of the party made visits to Lake Fyans, Jimmy's Creek Road, and the Victoria Valley.

On Saturday evening, a very enjoyable gathering was held at Norval. The feature of the evening was an excellent and informative illustrat talk by Mr Ian McCann, of Stawell. Although Mr McCann discussed all aspects of the natural history of the Grampians, the major portion of his talk was devoted to Botany. His large number of superb slides, and very knowledgable commentary made this an evening to be remembere We were fortunate to have the services of Mr McCann and other members of the Stawell Field Naturalists Club as leaders on the visits to Wonderland and Mount William, and their detailed knowledge was very valuable.

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

The lists of plants compiled for each major area are not comprehensive. Only a limited time was spent in each area, and numbers of plants present would not have been observed. Others, which were observed, were not identified, and consequently are not included in the lists.

Holly-leafed Grevillea - Photo by Trevor Pescott.

MT. ZERO ROAD

This area is a gently easterly sloping sand heathland bounded on the west by the abrupt wall of the Mt. Difficult Range, and intersected by small streams which rise in the Range.

The heathland is densely vegetated but contains a great variety of plants with sedges, various heaths, peas and many others. Scrubs of Banksia, Hakea, Melaleuca and Acacia trees provide the scattered tree cover. The vegetation is more luxurious along the streams and everywhere there is a rich herb flora including many orchids and lilies.

Some of the more interesting or noteworthy plants were as follows.

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

Acacia retinodes, Wirilda. Some good specimens of this tree were seen along the streams where it is at its best. It is by no means scarce and we observed it wherever we went. It flowers for most of the year.

Astroloma conostephioides, Flame Heath. There is hardly a more attractive heath in Victoria than this species which is so typical of the Grampians. The flowers are comparatively large and are followed by succulent red fruits which form a good part of the emu's diet. The emus probably act as the main seed dispersing agent as the seeds are very hard and indigestible. Few of the scarlet flowers were in evidence at this time, probably because of the dryness.

Banksia ornata, Desert Banksia. This is one of the three species of Banksia which occur in the Grampians and here on the heathland it often forms scrubs. It is an ornamental plant with harsh serrated foliage and large yellow spikes of flowers in autumn and winter which are relished by honey eating birds. Though usually thought of as a northern Grampians dry area plant some specimens were observed in the southern Grampians a week earlier. Here they grow much larger on the soil which is often very wet.

Boronia nana, Waxy Boronia. A few plants of this small species were seen along the tracks on the sand heath. They were flowering well with their small white, pink backed flowers but were usually passed unnoticed because of their size.

Calectasia cyanea, Blue Tinsel-lily. No other plant on the heathland created greater interest than this notable species. Although only a few specimens were seen, one was particularly fine and in full bloom with the six segmented purple-blue flowers gleaming with metallic lustre. This low shrubby plant is related to the lilies and ranges from Western Victoria to Western Australia.

Conospermum mitchellii, Mountain Conosperm. Why this plant should have the common name of Mountain Conosperm is not clear because it is found on highland and lowland alike. It is a particularly fine shrub in the Grampians where it grows to about five feet, and it was numerous along the Mt. Zero Road where it was making a fine show with its masses of white flowers.

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

Conospermum patens. is a rare relative of the former plant but we saw quite a few specimens. The mauve flowers were plentiful and were most plentiful and were most noticeable along the road. The C.S.I.R.O. has been interested in this plant because of some chemical properties. It is a slender erect shrub up to about four feet.

Epacris impressa, Common Heath. The well known heath could be seen in abundance here, in many colors. The Grampians is a noted stronghold for this plant where it attains unrivalled glory.

Gompholobium huegelii, Karalla. Only a few specimens were blooming in the open spaces of the heath but they were sufficient to earn it the attention the plant deserves. Its large golden pea flowers were some of the most beautiful seen that morning.

Grevillea alpina, Mountain Grevillea. The common and botanical names of this plant are also somewhat of a misnomer as the species is found at all altitudes in the Grampians. It was one of the most admired plants in evidence that morning being very showy with its gold and scarlet flowers. Good specimens were noted along the roadside. At Mt. Zero specimens are up to five feet high with wholly yellow flowers.

Helichrysum blandowskianum, Woolly Everlasting. This is a small perennial which was not common in the area. It is noteable for its woolly nature, the whole plant being covered in dense white wool. The flowers are clustered at the ends of the stem and are white, the whole plant presenting an attractive sight.

Melaleuca decussata, Cross-leaf Honey-myrtle. Only a few flowers of this shrub were yet out but it promised a good show. The species is a small woody shrub which often grows in thickets. The flowers are delicate mauve and are followed by hard sunken seed capsules which sometimes earn the plant the common name of "Totem-poles".

Stylidium graminifolium, Grass Trigger-plant. Trigger plants never fail to attract attention and here were eagerly sought after even though they were not numerous. The pollenation mechanisms were quickly set off by members of the party.

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

Styphelia adscendens, Golden Heath. This is another of the beauties the Grampians where it is common. The large yellowish flowers are beautifully formed with rolled fringed petals. Flowers are partly hidden in the neat foliage. They appear in winter and spring.

Tetratheca ciliata, Pink-bells. On his famous expedition through Western Victoria Major Mitchell considered this to be the most beauti plant he saw. He noted the species at Pidgeon Ponds south of the Grampians. The plant was conspicuous along the roadsides and in all other places we went.

Thelymitra ixioides, Dotted Sun-orchid. Several specimens of this orchid were noted by the roadside and creek where the flowers were expanded in the sunshine. Here the plants are more showy than local forms because of the larger flowers which are skyblue in both cases. These orchids were several of the very few we saw that morning, probably because of the dryness. The only other orchids seen were a few withered Greenhood rosettes.

When the main party had dispersed to return for lunch a carload of members drove further along the Mt. Zero road to inspect plants of the Showy Bauera Bauera Sessiliflora which had been seen a week earli at a small creek. It did not prove disappointing and was a mass of magenta bloom; the water also appeared coloured from reflections and fallen petals. The Showy Bauera is one of those many shrubs confined to the Grampians where it grows along almost all the creeks. It is difficult to imagine a more beautiful plant.

Also along the creek we noted ferns of several species and the Forked Sundew, Drosera binata, which is also typical of Grampians streams where it grows on mossy knolls and more open banks. The Forked Sunde bears claim to fame because it is one of the largest species of these fascinating insect eaters.

The roadside in this locality seemed to be a wall of white, the Silky Tea-tree Leptospermum myrsinoides and the Mountain Conosperm Conospermum mitchellii vying for pride of place. Both plants were growing to five feet and over.

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

Alpine Grevillea

Photo by Trevor Pescott.

MT. ZERO ROAD - PLANT LIST:

Acacia mearnsii	Late Black Wattle
Acacia melanoxylon	Blackwood
Acacia mitchellii	Mitchell Wattle
Acacia oxycedrus	Spike Wattle
Acacia retinodes	Wirilda
Acacia verniciflua	Varnish Wattle
Acrotriche serrulata	Honey-pots
Amperea xiphoclada	Broom Spurge
Astroloma conostephioides	Flame Heath
Banksia marginata	Silver Banksia
Banksia ornata	Desert Banksia

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

Bauera sessiliflora	Showy Bauera
Billardiera scandens	Wild Apple Berry
Boronia nona	Waxy Boronia
Burchardia umbellata	Milkmaids
Calectasia cyanea	Blue Tinsel-lily
Calytrix tetragona	Common Fringe-myrtle
Casuarina pusilla	Dwarf She-oak
Conospermum mitchellii	Mountain Conosperm
Conospermum patens	
Correa reflexa	Common Correa
Davesia mimosoides	Narrow-leaf Bitter Pea
Dodonea cuncata	Giant Hop Bush
Drosera auriculata	Tall Sundew
Drosera binata	Forked Sundew
Epacris impressa	Common Heath
Eucalyptus obliqua	Messmate
Eucalyptus viminalis	Manna Gum
Exocarpus cupressiformis	Cherry Ballart
Gahnia radula	Thatch Saw-sedge
Gompholobium heugeli	Karalla
Grevillea alpina	Mountain Grevillea
Grevillea aquifolium	Prickly Grevillea
Hakea rostrata	Beaked Hakea
Hibbertia fasciculata	Bundled Guinea-flower
Hibbertia stricta	Erect Guinea-flower
Hibbertia virgata	Twiggy Guinea-flower
Helichrysum blandowskianum	Woolly Everlasting
Helichrysum scorpioides	Curling Everlasting
Isopogon ceratophyllus	Horny Cone Bush
Kennedya prostrata	Running Postman
Laxmannia sessiliflora	Dwarf Wire-lily
Leptospermum myrsinoides	Silky Tea-tree
Leptospermum nitidum	Shining Tea-tree
Leucopogon virgatus	Common Bear-heath
Lindsaya linearis	Screw Fern
Lomandra longifolia	Spiny Headed Mat-rush
Melaleuca decussata	Cross-leaf Honey-myrtle
Microseris scapigera	Yam
Persoonia juniperina	Prickly Geebung

NOTES ON THE GRAMPIAN'S FLORA - PART 1 (Cont'd.)

Pimelea glauca	Smooth Rice-flower
Pimelea humilis	Dwarf Rice-flower
Pteridium esculentum	Austral Bracken
Pultenaea humilis	Dwarf Bush-pea
Spyridium parviflorum	Dusty Miller
Stylidium graminifolium	Grass Trigger-plant
Styphelia adscendens	Golden Heath
Tetratheca ciliata	Pink Bells
Thysanotus patersonii	Twining Fringe-lily
Xanthorroea australis	Austral Grass-tree
Xanthorroea minor	Small Grass-tree
Diuris maculata	Leopard Orchid
Pterostylis nutans	Nodding Greenhood
Thelymitra ixioides	Dotted Sun-orchid

NOTE: Part 2 - The flora at Wonderland and Mt. William will be printed in the April issue of "Geelong Naturalist".

* * *

FOUR SEASONS AT ANN ARBOUR

By Mrs J. Doman, formerly of Highton

Michigan is one of the northern states, to the right of the central part of the United States. Our part is Ann Arbour in the southern section, along with the other ninety per cent of the state's population.

We live on about three acres of land and it is my biggest joy to be able to not see it all at one glance, but to be able, on occasion, to go to the parts that are 'less travelled by'. There is a big

FOUR SEASONS AT ANN ARBOUR (Cont'd.)

pond on one side of us, to the left, and a channel on our right separating a railroad trestle from the Huron River, which at our spot is about twice the width of the Barwon in Geelong.

Part of our plot has a small woods on it - mostly secondary growth of poplars, a thin, brittle tree that snaps easily in a storm. The leave of this tree tremble with the slightest breeze making a clattering sou A row of a dozen mighty oaks marks one boundary. We also have two old shagbark hickories, very easy trees to identify, and some wild cherry, elm and maple. The biggest tree in the area is on our property - a sycamore, standing about 150 feet tall with a 17 foot girth three feet off the ground. The bark of this tree does not stretch as much as other trees and so it breaks and falls off. It will remind us of the eucalypts. We have to keep track of the health of this tree for the sake of the community.

Part of our land is a little swamp. When the site was first chosen, I said, "Why did you have to pick the lot with a swamp on it?" as if that were land wasted, but as I became a little wiser, I appreciated this untamed section. In it is a grown tamarack tree which is unusual in that, although it is a member of the pine family, it loses its needles in the autumn. We have tiny paths through the woods and acros the edge of the swamp and we act as if we had a large estate. Our neighbour, who owns part of the swamp, looks on it as a breeding spot for mosquitoes and would like to fill it up. In the summer, it is tru there are often so many mosquitoes that it is not a pleasure to be outside near the water. It is in the winter that we get the most benefit.

PLEASANT WINTER

Winter is a pleasant time of the year, apart from the driving. Snow does 'cover up the errors' and gives a brightness which makes the nights seem not so long. The first snowfall usually surprises one in the morning and the children especially, but really all except the most hardened, find it a wonder. The first snowflakes are usually the picture-book kind with perfect symettry and they can be appreciated best when captured for a second on the back of a mitten. Jack Frost etches some fine designs on the windows, although with better insulati this is not seen so often in houses - more in cars. The snow usually disappears not to come again for sometimes a month. This is a hard

FOUR SEASONS AT ANN ARBOUR (Cont'd.)

time to take, with the ground looking bare, dry and frozen. However, if one has an eye, it is the time to appreciate the beauty of the shape of the trees as in the other seasons this is obscured by the leaves. We get our only view of the pond at this time because of this.

Fish are supposed to be the tastiest at this time and men will push their shanties out on the edge of the river and sit for hours in with their pot-belly stoves and the hole they have chopped in the ice. We had an opposum once come up just outside the windows to warm himself. The muskrats' homes can be best seen now - dome-shaped huts of cat-tails and twigs. There are bright red cardinals with us all winter with their cheerful song, rather spoiling it for the robin who is supposed to be the harbinger of spring.

Early spring is very messy - seemingly all mud and our road is a dirt road. Winter has to put in a last blow and then one day we'll go out and can just tell by the smell in the air that spring is really here. We all succumb to 'spring fever' - a terrible sickness with no energy or ambition - just a profound desire to bask in the warmth out-of-doors. As we recover, we notice with new eyes the marvel of new life - in the budding trees, the first flowers, even the skunk cabbage down in the swamp, the bird songs. The first wildflowers are very delicate and their stay very brief. They are just a breath and then gone, and for that reason, probably, they are the most prized. One sure sign of spring is the sight of fishermen, usually negroes, walking up the railroad track. They always saunter along as if time were of no matter and they don't much care if they catch a carp, a bass or a pike or not.

Spring is a very busy time as the debris from the past months that has accumulated has to be cleared away and the ground made ready for planting. The time to plant each annual is fairly short with a growing season of four months or so the time that is allowed. Painting and repairs to the exteriors have to be begun too. One spring day, as I, and most everyone else, was working steadily at this or that outside, I had to stop for a while and gape at our neighbour over the way who was photographing one of his blossoms. He was enjoying himself! Unheard of! This man is a bachelor who bought a large house and appreciates the solitude, it would seem. He is a student of psychology with a specialty in worms. He has found that if a trick is taught to

FOUR SEASONS AT ANN ARBOUR (Cont'd.)

one worm, and that worm is cut up and fed to other worms, the newer worms will also know that trick. A very interesting neighbour and no doubt there have been some famous worms recovered by him from our creek.

FAUNA PLENTIFUL

We have to keep our eyes open for poison ivy, a common weed that frequently causes varying degrees of skin rashes. Elderberries grow wild and can be made into a good pie. Also a few blackberries - just enough for a mouthful. Milkweed grows along the channel and on this the wanderer butterfly lives for a time. Would that I could attach a mental note, anyhow, to one of these that will find its way back to Australia!

With snakes, we can adopt a 'live and let live' attitude as all but two rare ones are harmless in Michigan. Moles occasionally play havo with the lawn with their lengthy burrowings. We can be kindly to the rabbit, even going slowly up the driveway at night to give it time to scamper out of the way. But the garden patch has to be fenced or he will strip it of every green thing! What we call crayfish, of the fresh-water variety, leave their clay chimneys behind along the channel banks as they burrow down to the water. A great blue heron frequents the pond at certain times of the year and is a majestic sight. A leaky rowboat is just the thing to explore the water. If we go cautiously enough, we can surprise a family of turtles sunning themselves on a log. It takes but the slightest sound, though, and they will slide off into the water. There are lots of water lilies in one part of the channel, almost blocking the way.

Thunderstorms are frequent. It seems as if there isn't any rain without some thunder and lightning connected with it. The storms can be very violent and noisy, and while it is an awesome sight to see, only their frequency takes away from the fright.

We enjoy summer to the fullest, making the most of the warm three months we can be sure we will have. The temperature is usually in the seventies - with an occasional heat wave into the nineties.

FOUR SEASONS AT ANN ARBOUR (Cont'd.)

By the first of September, there is already a nip in the air and a few leaves have fallen to forwarn us of what is to come. The chipmunks set to work in earnest storing up their winter supply of acorns. We see them with their cheeks puffed out, holding so much food, we wonder how they can manage. Chipmunks and squirrels do not seem to share the same territory and we have the former, an attractive little animal with a stripe on his face and body. If we had the patience, we could tame them with some corn. A shallow bar' in the middle of the river nearby is the resting place for wild ducks and geese in their seasonal migration. Once one, who was a bit late maybe and got left behind, joined our domestic ones that were safely penned in. Pheasants occasionally walk across the lawn.

The colours of autumn leaves are a great sight, but especially out farther in the country where they can be seen in larger masses. But then all those trees that we have begin to lose their leaves and the ground gets thick. For a while, it is fun to swish through them, but eventually the job of clearing the lawn has to begin. They are thrown in a hollow beside the sycamore and with a rope swing above, the job serves a double purpose. After the first frost, we get 'Indian Summer', a period of balmy days which by legend was a sort of reprieve for people who hadn's done all that was needed to do to get ready for winter.

And with that, there is nothing left but winter, more winter, and more winter. Ho hum!

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PALLID CUCKOO
By Joyce Hunt

During September we have had four sightings of the Pallid cuckoo, but absolutely no sound. Until four years ago their monotonous, plaintive call could be heard very frequently throughout the Spring. But of recent years only an odd one or two have been seen in the district, and even these have been strangely silent.

Can anyone offer any explanation? Could it have any connection with spraying for pest control, perhaps.

POMMIES WALKABOUT

By R. Memmott.

"It's a holiday next Monday" I told my wife when I arrived home from work "It will give us a long weekend".

"Oh good, we will be able to go for a walkabout".

"Of course".

"Where shall we go?" Lilian asked.

There were so many places we wanted to see, the Grampians, Wilson's Promontory, the Dandenongs, Gippsland. Out came all the maps and any books that might help. We made a list of them and a rough check on the mileage. That one was a day trip, that a weekend, that for Easter and those long weekend walkabouts.

"I rather fancy going to Phillip Island to see the penguins" I announced when we had finished.

"Suits me".

A week of bustle, deciding what we would need for the trip. As our car has layback seats we studied the R.A.C.V. book on caravan sites. Saturday morning all was loaded up about 11.00a.m. and we set out in glorious sunshine. Traffic was rather heavy and we wondered if they were all heading for the same destination as ourselves. San Remo, we were nearly there. As soon as we reached Cowes we booked in at a caravan site, had our tea then set off for Summerland Beach to see the penguins.

It was still light when we arrived so we joined the crowd and waited. Heavy clouds on the horizon made us rather apprehensive, then vivid flashes of lightening zig-zagged across the sky and we had left our macks in the car. We wondered which would come first, the penguins of the storm. Gradually the sky darkened and a voice over the loud-speaker announced the penguins were expected about ten minutes past eight. A glance at our watches showed it was nearly that, so we strained our eyes to catch the first glimpse of the penguins

"There they are" somebody shouted.

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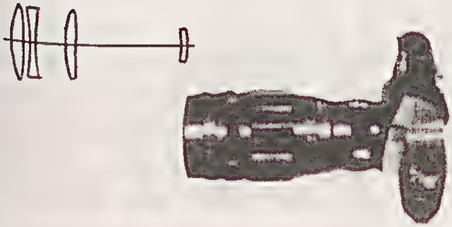

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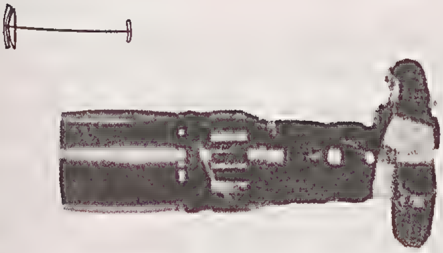

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POMMIES WALKABOUT (Cont'd.)

I could just see faint splotches of white at the sea's edge, presentl we could see seven little figures walking stiffly up the beach, just like the dwarfs in Snow White. The spotlight was turned on and at la we could see the penguins. So full of fish they could hardly walk. Before they reached the grass covering their burrows a larger group could be seen just beyond the light. There were about twenty this time, one could hardly walk. He fell behind the others and fell a fe times. One of the wardens picked him up and carried him to the grass.

They came in quickly after that, singly or in groups. One hesitated at the edge of the lighted area, turned back and made for the sea again. Once more he hesitated, turned again and started walking alon the beach. Our attention was taken off him by more arrivals, when we saw him again he was waddling in still another direction. Then sighting another lone figure it hastened to join the new arrival.

"He's alright now" I said to Lilian.

But I was wrong. Once more at the lighted area he hesitated, then turned back while his companion plodded resolutely on. I began to wonder whether he was ever going to make it, I wanted to pick him up and carry him to the grass. Eventually he joined a group and followe them. By this time between two and three hundred must have waddled up the beach and they began to thin out. An odd one or a small bunch now and then. The show was over and the spectators began to drift away. We decided to follow. Up on the top a crowd was clustered against a netting fence. We went to see what was happening.

"That one is taking his time about going into his burrow" a man informed us.

Following his finger we saw a penguin preening himself.

"There is a baby one over there" the man went on "He goes for every penguin that comes up but they won't have anything to do with him".

As we watched a chick hurried over to a new arrival and disappeared behind a clump of grass. The first penguin, having completed his

POMMIES WALKABOUT (Cont'd.)

toilet, decided to go to bed. Down the hole he popped, next minute earth came flying out of the burrow. We watched the chick for a few moments, then decided we too had better go home.

The next morning we took the road again. The Noddies and the Seal Rocks seemed very interesting. How like Land's End in the Old Country they were, even a cafe near the edge. We climbed down to see the Blowhole and found it disappointing. The look at the seals through the telescope had more attraction. On the way back to Newhaven we stopped at the Koala Sanctuary. People were gazing up into the trees on all sides. It was dinner time, so duty before pleasure. Feeling more comfortable we walked over to see if we could see some koalas. We saw them alright, there was a koala up nearly every other gum tree. The first was a big fellow, sound asleep with his chin resting on a paw. Another was abviously fed up with being stared at or was bashful He presented the least attractive part of his anatomy for our inspection. Up one tree an untidy bundle of fur made us wonder if it was a mother with a baby on her back. If not it was deformed, it was hard to find out.

We had seen all Phillip Island had to show and we still had a day to go. Where to go now? Out came the maps again and we ran through a list of places we had not yet visited. Wilson's Promontory, too far. The Grampians, right out of the question. Sherbrook Forest, just the spot, we might even see some Lyrebirds. So the car was turned North and we camped that night at Emerald. Next day we made Sherbrook Forest and went looking for the Lyrebirds. Walking very quietly we peered into the undergrowth, suddenly there was a yell and three children raced down the track.

Then we heard the Lyrebird calling and moved hopefully in that direction. Everywhere seemed nice and quiet until we overtook a man with a transistor set going full blast with the cricket match. Hopefully we moved off in another direction, then we met two youths with their girls. They were not looking for Lyrebirds. So we gave it away and returned to the car.

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TRIP TO HATTAH NATIONAL PARK SEPT. 6-7-8th., 1967

By Marjorie & Fred James

In September we decided to have a couple of days at Hattah National Park before the lakes dried up completely, due to the severe drought which has had Victoria in its grip for some time.

Not being campers we booked ahead at Ouyen Motel for three nights, heading north on Wednesday morning in beautiful weather arriving at our destination very late in the day, due to a number of stops for meals and sightseeing.

After a frosty night we were astir early and heading for Hattah, firs to find Mr Ben Eggleton who was able to tell us quite a lot of the local history as he was the first ranger of the Park. Just outside the rear fence of his property we were able to watch and photograph a pair of Striated Pardalotes feeding young.

After a very interesting couple of hours there we moved on in to the Park where we had lunch and met the assistant ranger. He proved to be most helpful and after identifying ourselves as members of the Geelong Field Nats. and the Birdo's we were able to get a lot of information which would not normally be available.

We were delighted with the number of birds which came to the small pool in the ranger's garden, and later in the day, I set up my camera with a 400 mm tele lens and was able to get some shots of birds I had not been able to get previously.

Whilst driving along a sandy track a couple of miles from the camping area, we came on a man down on his knees with a camera to his eye, very intent on the job of getting a photo of a very small spider. He introduced himself as the Editor of the Victorian Naturalist, and, we had an interesting chat after I had lent him my 135 mm tele to enable a shot of the spider to be taken from a bit further away, as the spider was very shy about the whole business of close up photography. A little further along the track we disturbed a large Goanna (4 ft 6 ins) who went for the nearest tree and in a matter of seconds was well up in the top branches. A pair of Mallee Ring Necks were very upset and raised their voices in protest without any result.

TRIP TO HATTAH NATIONAL PARK (Cont'd.)

Whistling Eagles were nesting high up in the Gums and showed their dislike for me by diving on an unsuspecting Raven which happened to be minding his own business and just going past the eagle's nest.

Feeding in the lakes were numerous Spoonbills, Straw-necked Ibis, Black Swans, Little Pied Cormorants, Mountain Duck, White-necked Herons and one lone Pelican.

We spent many hours roaming in the Mallee scrub watching for and seeing many birds which we had never seen before. The Purple-backed and Black-backed Wrens were a delight to see, the colors being so vivid against the harsh background of the red sandy landscape. My efforts to photograph these little birds were a complete failure but that mattered not at all as the sight of the birds was reward enough.

The next morning we were away early again and spent the whole day wandering around the reserve, taking a photo here and there as the opportunity arose, and thoroughly enjoying ourselves watching the birds moving around, a lot of them looking for nesting sites.

On Saturday morning we visited a Mr Dart at Lascelles who has bred a lot of the rarer parrots and shows them to anyone who cares to call in. He kindly put us on the right track to get information about the Lowan by giving us directions to find Mr Angus Torpey at Turriff, who has successfully bred the Lowan in captivity. Mr Torpey spent a couple of hours with us and took us out in his Land Rover to see some mounds that were being prepared for egg laying. He has a great number of mounds under observation for the Fisheries & Wildlife Dept. and has done a lot of work voluntarily for the Department.

We left for home on Saturday afternoon and after a good run arrived in Belmont very tired but very pleased with our visit to Hattah.

Altogether, we were able to list sixty seven species of birds, the following being of particular interest:
Crested pigeon, Bluebonnet parrot, Yellow rosella, Regent parrot, Little Friar-bird, Blue-faced honeyeater, Chestnut quail-thrush, Chestnut-crowned Babbler, and Emu with five chicks.

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* * *

PROGRESS?

From "Wildlife Review", publication of the British Columbia Fish and Game Branch -

> "The Superhighway is made for a nation of by-passers. When the Federal Interstate Highway System is complete, it will be possible to bypass the whole of America. Progress?"

Could it be that with our own advances in engineering knowledge we are heading the same way?

Mr Max Downes, in a lecture to the G.F.N.C., said that in his opinion the development of a great road system in northern Australia will bring about an extinction of the Bustard by bringing in more motorists and tourists - and shooters. Again - Progress?

THOSE FRIENDLY NATURALISTS

By J.H. Whitmore

Our last holiday in April was spent in the Bairnsdale and Lakes Entrance districts.

On reaching Bairnsdale, I contacted the Secretary of the local Field Naturalists Club, and asked if they would be having a meeting during the ensuing fortnight. Mr Barton told me that the next meeting was to be held the following night, and we would be most welcome.

As we intended staying at Lakes Entrance and visit places of interest from there, I was told to get in touch with Miss Ruth Clarke, a member of the Bairnsdale Club, living at Lakes Entrance.

Shortly after arriving in Lakes Entrance we made ourselves known to Miss Clarke, who made arrangements to get us transport with herself and a friend, to the meeting in Bairnsdale the following night, for which we were very thankful, as rain was falling and the road was strange to us.

The meeting took the form of a lecture, and a farewell to a family in the Club.

Mr Prendergast, who is an officer in the Department of Agriculture in New Guinea, gave an interesting lecture, illustrated with some magnificent slides, on the work being carried out in teaching the natives how to cultivate the land by more modern methods, so they can produce bigger and better crops.

The slides showed some wonderful mountain scenery, and neat native villages, the houses built of saplings and kuni grass. Some of the crops being grown were also shown.

Mr Bowden and his family, who were moving to Melbourne, were given a farewell. Mr Bowden was the Editor of the Bairnsdale Field Naturalists Club magazine "Clematis", of which we have some issues in our library.

The Bairnsdale Club were holding their monthly outing the following Sunday, and we were invited to join this outing, which was to Mt. William, a few miles east of Orbost. The object of this trip was to look for Autumn greenhoods, but owing to the very dry conditions only three specimens were found. It was on this outing that we met Mr & Mrs Pitt, who several years ago lived in East Geelong.

Our stay in the Lakes Entrance district was made much more enjoyable due to the friendliness of the members of the Bairnsdale Field Naturalists Club.

AT RANDOM.

TRAFFIC HAZARDS: by Joyce Hunt.

Birds caused us to stop the car three times on the last September excursion. We had just left home when we found the creek crossing barred by a water-logged black cormorant. After flapping for some seconds he was able to fly away and we proceeded, but had to stop a few miles further on to remove a very young magpie out of harm's way. The nest had obviously been blown down in the gale two days earlier, and the two young ones (delightfully wistful and appealing) were sitting near it - one perilously close to the road.

The biggest surprise came as we rounded the curve leading to the steep descent to the creek crossing, on the way home. Here we were brought to a sudden stop by the most unusual traffic cop we've ever seen - a black swan, sitting right in the middle of the road! Probably he was bewildered by the car lights, as it was some time before he could be moved; and we imagine that he may have hit the power lines above and been slightly injured. Having shepherded him safely off the road we were trying to decide how to get him home and care for him, when he settled the question himself by flying off into the darkness. We hope he recovered and found his mates, but it was a queer experience to meet a swan on a steep curve on a dark night!

ON HEAD BOBBING: by Alan Sonsee.

A question often asked is - "Why do some birds, most noticeably domestic fowls, move their heads back and forth as they walk?"

Pigeons walk with a distinct jerking movement of their heads. I note that the painted quail, which at times I see in my own paddock, have a somewhat similar head movement when walking.

Can you think of other examples, and then try to reach a conclusion?

AT RANDOM (Cont'd.)

I wonder if birds, grain eating ones that store food in a "crop", illustrate this movement. Then is it something to do with this factor in their physiology? The crop, when full, must be a heavy awkward bag to carry. Perhaps to aid balance the head is thrown backwards, as the leg moves forward. This is merely supposition.

Does anyone know why the Eastern Swamp Hen, and other semi aquatic birds, have a jerking tail movement?

It is very noticeable in the Swamp Hen because the tail beneath is white. White is an accepted danger warning. When swans fly the white patches on wings show. In the wild this is readily noticed by other swans and accepted as a warning sign of danger - or this is the theory.

Rabbits and deer have white beneath the tail for a similar reason.

The white beneath the body of many animals is known as counter shading, an aid to camouflage. The penguin has it somewhat for the same reason. An enemy looking up at a penguin, through the water, could miss the penguin, because the silver white fits in well with the light on the water surface.

Now to return to your original question. Try to build a group of birds that have the head jerk. Have they anything in common? You can then form what scientists call a hypothesis - that is a probable but unproved theory. A hypothesis needs proof, but it is a beginning.

PILOT BIRD FOUND NESTING: by John Jaffe at Timbertop.

I thought members might be interested to know of my finding a nest of the Pilot Bird (Pycnoptilus floccosus), in very heavily timbered country of mountain ash and dense undergrowth. The nest was situated approximately six inches from the ground, and contained three chocolate coloured eggs with a single hairline marking on the larger end. The nest was a dome shaped structure of interwoven strips of bark and leaves, with a side entrance consisting of a platform measuring about five inches. Both birds became excited when I examined the nest and came within a few feet of me, and uttered a weird cry. Both birds were

AT RANDOM (Cont'd.)

of a rich dark brown plumage and no difference could be noticed between the sexes..

(Ed. note. This is an interesting find of John's and one not many naturalists have seen. The Pilot Birds are confined to the thick forests of south-east New South Wales and south-eastern Victoria. One can usually find them by identifying their 'guinea-a-week' call. The birds are a little smaller than grey-thrush size. Campbell in his book 'Nests and Eggs of Australian Birds', has this to say - "There was some mystery about the habitat of this bird when it was first revealed to science by Gould. It was supposed to come from the interior of New South Wales. It is true that the Pilot Bird is found in New South Wales, but in the forested tracts near the coast, and not further inland than the Blue Mountains".)

NOTES ON THE SMALL DUCK ORCHID: by Trevor Pescott.

On December 12th last year, I visited an area near Steiglitz where the Duck minors grew; several plants were in flower, but as I did not have a camera, I decided to return several days later after work. I was unable to reach the spot before 7.30p.m., and I found all the flowers had closed, so no photographs were obtained. I thought that the wind, or even a bird or insect, had triggered the flowers, as they snap closed if touched, so two days later, again after 7.00p.m. I returned, but again found the flowers closed. It seemed too much of a coincidence for them to have been touched by anything, and wondered if the flowers are sensitive to sun or at least strong daylight.

Mr Geoff Carr, who has several C. minors in cultivation was asked, and after checking the plants on several evenings confirmed my original observation - the flowers do close up in the evening.

I wonder just how light sensitive they are - a problem which could be solved by several simple experiments.

****

JUNIOR PAGES.

The Editor has two letters for "Junior Pages", the first being from Dianne Dixon, who writes - "Last Sunday we were enjoying ourselves at barbecue at the You Yangs. The littlies were admiring an old kookaburra sitting, proudly up in the tree. Dad was standing over the smoking fire watching the remaining sausages. He came over to the table to join us where we were all having our lunch. No sooner had he done this, when the kookaburra swooped down and took in his beak the longest sausage. He sat up in the tree shaking it vigorously to cool it down. It happened so quickly that we were all startled. After eating the sausage he flew away, we presume to find some other unsuspected picnicers."

Dianne's letter came in October, just a few days too late for printing in the last issue - and at a time when it was still safe to light barbecue fires! Kookaburras become very cheeky at places where people regularly picnic, for they seem to know that no matter what they steal their jovial laughing call compensates for their thieving.

Incidentally, Dianne did not write her address on her letter, so the Editor could not write to thank her for her contribution - Juniors who write to the Editor with notes should include their own address so he can reply.

The second letter is from Garry Dodson of Mannerim, who found a plovers nest. "Last Friday (early September '67) I went down the paddock to get the calves, and on the way back I saw a nest. It was on the ground in some long grass, and there were three dark green eggs, smaller than a hen's egg, with black spots over them. Dad told me it was a plover's nest. As soon as I left a plover came down near it."

And we do need your letters too, to fill these pages set aside for Junior members; please send your contributions to the Editor, 4 Victoria Terrace, Belmont, 3216.

JUNIOR PAGES (Cont'd.)

YELLOW-FACED HONEYEATER:

The bird shown on page 64 of the July issue was identified as the Yellow-faced honeyeater, and as promised, here are a few notes about the bird.

The Yellow-faced honeyeaters are one of our smaller honey-eating birds; being about the size of sparrows; they are brown in general colouring with a line of yellow from the beak below and behind the eye. This gives the bird its common name. Even the name used by scientists describes this - it is Meliphaga chrysops - and the word chrysops is Latin for "yellow faced".

The nest is beautifully cup-shaped, made mainly of roots or fine bark strips bound together with cobwebs; the outside is usually covered with green moss. In our district we find the nests in the spring, in bushland such as we have at Anakie, particularly in the gullies like the Gorge, and at Bannockburn.

Generally there are three eggs laid, these being pink with brown, or purplish colored, spots at the larger end; they are typical of honeyeaters, and they are very pretty.

In the autumn and winter, the Yellow-faced honeyeater visits the gardens in our city and suburbs, and it generally tells us of its arrival with its cheerful call sounding like "Chick-up, chick-up". Once identified, you will realise that you have heard it often before, probably without realising which bird has made the call.

In the next issue, a simply built feeder for honeyeaters will be illustrated, and if one of these is made and set up in the garden, many birds will flock in to feed. A few cents of your pocket money will be needed to buy sugar to attract the birds, but it will be money well spent.

* * *

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Published by

THE GEELONG FIELD NATURALISTS
Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in month, at 8 p.m. at the Reformed Presbyterian Church Hall, Fenwick Street, Geelong.

Visitors Welcome.

All papers submitted for publication in this journal should be sent to the Hon. Editor.

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VOL. 5, No. 2 JULY, 1968 PRICE 25c

GEELONG NATURALIST

Journal of the Geelong Field Naturalists Club

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YOUNG MOUNTAIN DUCK

Hon. Editor: Trevor Pescott

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

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Adult Membership	$2.00
Joint Membership	$3.00
Junior Membership	50¢
Subscription to Magazine	$1.00

COVER PHOTOGRAPH:

Young Mountain Duck

by R.G. MacKenzie.

GEELONG NATURALIST

Vol.5. No.2. July 1968.

EDITORIAL

In his annual report, Mr. J. Wheeler wrote that he believed we were not doing enough for the Junior members, and subsequently his suggestion to the Club's Committee resulted in the commencement of lectures for Juniors.

The short talks are held prior to each General Meeting, and they are aimed at giving the young Club members an inkling of various subjects; they are not intended to be a "crash program" in teaching the youngsters all that is known about a particular subject.

But it is hoped that an elementary grounding in natural history will be given, for at these early ages, the youthful mind is eager to learn, and is sufficiently supple to absorb such diverse topics as orchids, birds and insects without effort.

As the years pass, it becomes more and more difficult to learn the basic structure of nature, and a solid grounding at this most impressionable and receptive age of sub- or early-teens is never lost.

Most of us are realistic enough to know that we will retain as active, adult naturalists very few of the many juniors who show an early interest; it is natural for youngsters to search for things to occupy their thoughts and energies, and what better than lizards, spiders, or birds to do this?

If this early interest does not result in dedicated naturalists, or active conservationists in latter years, the loss is not as great as we may at first think. The important thing is that instilled into all of us is the knowledge that there are such things as wild creatures worthy of study and preservation. And knowledge absorbed as a youngster is rarely lost, even if it is often pushed into a somewhat disused corner of the mind.

Recently, I was asked how can the average layman help conservation - my answer was to take an interest in proposed conservation projects, to voice support, or if warranted criticism, of the projects, but always take an interest in them.

TREVOR PESCOTT,
Hon. Editor.

TANKS

By R.R. Baldwin, Corio

In the interior of Australia there are thousands of tanks, some of them ironclad and known as such. Nevertheless, no neighbouring people need grow timorous at the thought of an armoured nation, spoiling for a fight. Nor need any more sophisticated Australian city dweller, wise with the half-remembered knowledge of youth, throw up hands of horror at the thought of jungles of galvanized iron. The tanks in question are different altogether from the mind pictures hinted at above. They are mere holes in the ground, generally rectangular, to contain water, and they are common in all the drier parts of the continent. In the droving days they were vital. Nowadays, stock travels by huge transporter and a hundred miles is nothing. Time was, however, well within living memory, when the animals had to travel on their own feet and ten or so miles was a day's journey. Then, water at frequent intervals was a vital necessity and to meet the need the tanks were constructed.

A hole was scooped in the ground and the spoil was heaped into a wall all round to make the tank. The careless might call them "dams". In this, of course, they are wrong. A "dam" holds back a creek of running water, whilst the tank, though similar in appearance, merely contains water that comes to it from artificial sources. It may be filled from a bore or from a channel which runs once a year; if from a bore there is probably a windmill to pump the water from bore to tank. Sometimes the tank was an "ironclad", like the one at Nowingi, near Mildura, which has a whole artificial hillside of galvanized iron to catch the sparse rain of that dry region. Whatever the type of tank there used to be stock-troughs, with probably a hand-pump to fill them. Now, of course, they have fallen on evil days. The troughs are holed by rust, while the pumps loll on tumbledown stands and suck only air, though the big tank is full.

So much for the purpose of the tanks - they held water as houses hold people. And, just as houses vary on a street, so do tanks vary on a stock route. There is Trinita, for instance, between Ouyen and Hattah in the Victorian Mallee. Here there is a great, wide, open flat, with sandhills on either side clothed in Mallee

A Mallee gate. Pine and cabbage - tree.

Tank at Cassell's Crossing. Buloke on bank.

Photos by Rolf Baldwin.

TANKS (Cont'd.)

scrub. The flat is otherwise bare, as are the four clay walls of the tank in the midst, very austere. Then, out by the Pink Lakes near Underbool, there is a nameless tank, a mere little lake of fresh water, with bull mallee all around and very little else. Away and away to the North in New South Wales, between Cobar and Bourke, one finds Goorilla (or is it Gorilla?) Tank. This is a big one. There are two lines of troughs with a huge mill standing guard, close pressed by the scrub which extends for scores of miles in all directions. Closer to home again is Cassell's Crossing, just short of Carwarp, on the Melbourne - Mildura railway. Here there was once a homestead where now all is deserted. Once, doubtless, children were there to watch the horses come in for their evening drink; now belah, acacia, mallee-gum and Murray pine brood in silence. Lastly there is a tank which has virtually disappeared. Forty years ago York Tank stood in a wide pine flat, where the soldier settlers of the day had made for themselves a pair of tennis courts. In those days, while his elders played tennis, a youngster watched with eyes of wonder the birds that came in to drink. "Ringnecks" and "smokers" were of the crew, as well as crows, galahs, babblers, "grass parrots", choughs and dozens of others for which he did not then have even the vernacular names.

In the old days the tanks were vital to the travelling stock. Nowadays this need has almost vanished, but Australians far older than we are have long taken advantage of the amenities which the newcomer, Man, has built for his own ends. Ever since they were first put down the tanks have become the morning and nightly gathering places of the birds and animals of the localities which they serve. Almost, it might be said, they have become the pubs of the outback fauna.

If one regards the tanks as hotels then perhaps Goorilla Tank is the "Young and Jackson's" of the scrubs, for there all of the outback rubs shoulders. For the watcher it is a place beyond compare. As the sun vanishes below the scrubs he sits silent and still, waiting for what he may see. Galahs, sulphur-crested cockatoos, crows, choughs have come and gone. They have their rowdy drink and then move off to parties of their own, leaving the bar-counter free for quieter folk. First it is a vixen, very demure, who sips and then departs. Then it is kangaroos, wary, but reasonably confident, then a few emus. These ancient birds stalk in, self-assured, kneel with legs reversed to our way of thinking and drink long and thankfully. Finally, all pauses, false alarms, proppings and cautious advances, come half a dozen brumbies, the dust of their movement showing like a silver mist against the rising moon.

Meanwhile, in the last half hour of daylight and the first of twilight come the birds of the pigeon, parrot and finch tribes, drinking on their own side of the water, seemingly oblivious of their larger compatriots on the eastern bank. Their cooings and twitterings fill the air. The main groups are red-backed parrots, quarrions, budgerigahs, crested pigeons. Unlike humans they seem each to be happy to go their own uninterfering way. The parrots are in large bodies, which fly hither and thither with much twittering, false alighting and timid starts before finally they settle to drink, and even then it is with much elbowing and expostulation. The pigeons are much better behaved. Bronzewings are solitaries or pairs, but the crested pigeons come in family by family. It is fascinating to watch how a dozen or so will be on the strand drinking their full, while other groups sit in patience further up the bank. Then, when the drinkers have finished, they flitter away sideways and a new group, without the slightest disorder, thankfully takes their place.

So much for Goorilla, but the others also have their memories. At York the picture is of a long, wide flat, with hop-bushes here and there, and many a Murray-pine, now, alas! gone before the bulldozer. That flat was the particular abode of choughs and babblers. Then there was the unnamed tank by the Pink Lakes - if only it had some such memorable title as "Broken Bucket". The camper here will be lucky if he has anything more to welcome him than a few Mallee parrots and galahs, but even they, though common enough, are very beautiful. And at Trinita what may not happen? Once it was a family party of four emus, squatting in the water bathing themselves, as hens do in sand. On another occasion it was Major Mitchell cockatoos. There were only two of them in their exquisite pink and white, but what a picture they presented against the dark green

TANKS (Cont'd.)

background of scrub, perched in the symmetry of nature on an old dead stump. To see this, once in a lifetime, is to have lived!

Best-loved of all there is Cassell's Crossing. In that happy spot the scrub crowds thickly round. Mallee, belah, scrub pine, Murray pine, cabbage bush, hop bush, salt bush, porcupine grass - all are there, with many another that the trained botanist could name. Across the way are the ruins. Only a couple of walls and the remains of an old bough shed are left to show that this was once the abode of men. Here, if he knows the place, the wayfarer may camp. In the evening he may watch all the birds that have been mentioned above. The Mulga parrot will probably be there, the ubiquitous black and white fantail - why does nobody think of a happier name for this perfect little bird? - choughs, magpies and many a honeyeater.

As the wanderer sits there musing by his fire. Orion or Scorpio will ride high, so bright that they seem almost close enough to touch. Then the night train will go thundering by. After that there will be silence again. The watcher will listen, the stars will listen, the scrub will listen, but no more will the call of the dingo be heard as once it used to be in those parts. Only the sepulchral note of the boobook will ring out to give a reminder of the ancient inhabitants of the land.

* * *

EASTERN SPINEBILL - information requested.

I am collecting information about the EASTERN SPINEBILL, particularly breeding records; there appears to be few Melbourne suburban nesting records, and it would be interesting to find their breeding habitat.

The birds visit my nectar-feeders almost daily, but disappear in November altogether, although the food supply in flowering plants and the feeders remains; they return in about the last week of February, accompanied by immature birds. I would be interested in any information about this bird - breeding records and plants visite by the Spinebills in gardens in particular; all information would be gratefully acknowledged.

Mrs. E.M. McCulloch, 6 Bullen Ave., Mitcham
3132.

"I WILL LIFT UP MINE EYES ..."

By Ellen M. McCulloch, Mitcham

Most of us by the sheer force of necessity live in suburban areas, closely built-on, and with a corresponding reduction in the numbers of native birds. One way to enlarge our knowledge is to get into the habit of looking UP at the birds as they pass over at varying heights.

These flights fall readily into 3 categories - the short 'hops' of residents moving about their territories, the brief visits of occasional wanderers mainly looking for food, and the high flight of those that are steadily on the move elsewhere, and which rarely visit suburban backyards.

Once you get into the habit of deliberately going out to the backyard to look up, you will be amazed at how much can be seen. For instance this morning I watched an Eastern Shrike-tit fly across to a wattle-tree in the backyard - the first time in six years of recording that I have ever seen one here. Hidden in the wattle foliage, I would probably have missed it.

Some species are obliging enough to call in flight, and these include pardalotes, silvereyes, parrots, goldfinches, ravens, swans, lorikeets and cuckoo-shrikes. I know that at least in my small area of garden some will be able to rest and feed for a while without picking up lethal DDT-laden insects - unless of course these have come in from elsewhere. Seeing birds feeding in the shrubs and trees we have planted in the last six years is a satisfying experience for me as well as the birds.

The 'high-flyers' are amongst the most exciting to note. Binoculars are certainly useful here, and it's no use saying you can't see a bird in flight through them; practise every day until you can. It is well worth the effort.

It may not be absolutely essential to have binoculars strung around your neck when you hang out the washing, but I can testify to the convenience of it. Having them neatly encased inside is of little use if you're outside. Birds fly deceptively quickly, and without binoculars what you saw may forever be an irritating mystery.

"I WILL LIFT UP MINE EYES ..." (Cont'd.)

From my home in Mitcham, 13 miles east of Melbourne, I have a long list of species en route to somewhere. These include those pattern-makers the Straw-necked and White Ibis, Cormorants, waders, Swans, and more birds of prey than I would have thought possible in a suburban sky: one Wedge-tailed Eagle, a Black-shouldered Kite, several visits from a Whistling Eagle, and irregular repeated sightings of Australian Goshawk and Little Falcon.

For beginners, hawks are not easy to identify, and the Bird Observer's Club "Field Guide to the Hawks" by H.T. Condon is very useful, as it includes under wing patterns. Available from B.O.C. Publications Sec. Miss E. Ritchie, Flat 3, 6 Grattan Street Hawthorn. Vic. 3122. Price 50¢. plus 9¢ postage.

Undoubtedly my most spectacular sighting was the 3 Pelicans which staggered me by flying overhead only 50 feet up - goodness knows where they thought they were going at that height. Swifts, to me, fall into a category of their own; their fascination grows with the seasons, and their visits are always a good excuse to leave the house-work. They often fly so high that they are only visible through the glasses.

We know little in Australia about migration routes of animals. The Royal Australasian Ornithologist's Union is conducting an Individual Observation Point survey to find out more about the migration and other movements of our birds. Amongst other things, it is hoped to clarify some aspects of trans-Bass Strait migration. This survey calls for regular observations, but is not difficult or terribly time-consuming. The convenor of the survey is Mr. D.G. Thomas, of 2 Lallaby Road Tasmania 7009, and he will be pleased to hear from all competent observers, whether they are R.A.O.U. members or not.

So much has been written for so long about bird migration that it is difficult to know where to start reading. One beautifully written book which is very readable is "Down the Long Wind" by Garth Christian. It was first published in 1961 by Newnes of London, and is a study of bird migration. The final chapter deals with the future outlook for migratory birds, and it doesn't look too rosy.

By setting aside enough areas now to form oases both large and small

"I WILL LIFT UP MINE EYES ..." (Cont'd.)

for these travellers, by planting more trees, by taking the time to interest school-children, by pestering the authorities to move now against the indiscriminate use of pesticides without sufficient research, we may help to provide for future generations the pleasure of watching these graceful wings that lift our hearts as well as our eyes.

I quote the final words of "Down the Long Wind" --

> "Especially, perhaps, we need to nourish a sense of trusteeship towards those migrating birds which the blind Milton found to be "intelligent of seasons", as millions of them set forth
> 'Their aery caravan; high over seas
> Flying, and over lands.' "

* * *

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KARKEEN WALKABOUT

By C.J. Gibson, Belmont

This walkabout is to discover that legendary place called Karkeen, the source of the outstanding stone material referred to as greenstone and so highly valued by the aborigines for their stone axes.

Aboriginal axe-heads made from this particular stone have been found all around the Geelong district from camp sites at Durdidwarrah in the north, and Inverleigh in the west to Indented Heads at the western extremity of the Bellarine Pen. and Torquay in the south. The intriguing question is, where did the aborigine get this stone?

William Buckley, the convict who escaped in 1803 from Colonel Collin's settlement at Sorrento and lived with the Geelong natives for thirty years, said this of their tomahawk; "The heads of these instruments are made from a hard black stone, split into a convenient thickness, without much regard to shape. This they rub with a very rough granite stone, until it is brought to a fine thin edge, and so hard and sharp as to enable them to fall a very large tree with it. There is only one place that I ever heard of in that country, where this hard and splitting stone is to be had. The natives call it Karkeen; and say, that it is at a distance of three hundred miles from the coast, inland. The journey to fetch them is one of great danger and difficulty; the tribes who inhabit the immediate localities being very savage, and hostile to all others. I was told, that it required an armed party of resolute fighting men, to obtain supplies of this very necessary article; so that the tomahawk is considered valuable for all purposes. They vary in weight from four to fourteen pounds; the handles being thick pieces of wood split, and then doubled up, the stone being in the bend, and fixed with gum, very carefully prepared for the purpose, so as to make it perfectly secure when bound round with sinews." (1)

That interesting account would seem to give us a helpful hint for commencing our walkabout - a long way inland. But in which direction?

Perhaps, first, we should question the distance. Obviously the

KARKEEN WALKABOUT (Cont'd.)

natives didn't tell Buckley that it was three hundred miles but that he interpreted their explanations in such terms that he thought might be meaningful to European readers. We assume also, of course, that John Morgan correctly transcribed Buckley's story. Linked with the frustratingly vague reference to direction we have this exceedingly doubtful reference to distance - exceedingly doubtful for it is almost certain that nothing more precise than a rather general conception of "a long way" should be understood from this. (2)

A somewhat similar stone, epidiorite, is to be found at Dog Rocks near Batesford and also at Gleeson's Hill, near Ceres in the Barrabool Hills. This is a greenish or greenish-grey stone, course to fine grained but hard and tough. Many edge-ground axes of this stone have been found in the district, particularly in the south around Bream Creek and Torquay, and also from a number of places in Central Victoria. These places would be no more than about six miles from the present city of Geelong in a N.W. and W. direction respectively. Although aborigines apparently have at some time made axes from stone from these sources Buckley made no reference to the fact and, it would seem, certainly was not referring to either as Karkeen. Both are very interesting places for going walkabout and do warrant a visit, but our present search must continue further afield.

The next clue we should follow is provided by C.E. Sayers the editor of the reprint of Morgan's "Life and Adventures of William Buckley". Not only are we indebted to Mr. Sayer for providing us with this reprint edition making such a fascinating story readily available to us but also for many additional footnotes to assist the reader. In one such footnote referring to Karkeen Sayers says; "Origin of this stone cannot be established. May have been the Otway Ranges, but if the location was, as Buckley suggests, 300 miles inland from the coast it may not have been within Victoria. Granite is found in parts of the Grampians, but this is not 300 miles from the coast."(3)

It is just possible that Karkeen may have been in the Otway Ranges

KARKEEN WALKABOUT (Cont'd)

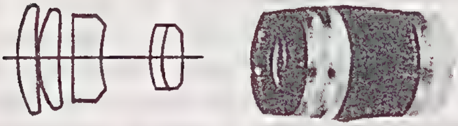
as is suggested, for a diabase rock with similar physical characteristics is to be found at Chatsworth on the Hopkins River in the Western District. This would be about 110 miles from Geelong but only about 50 miles north from Warrnambool on the coast. This "somewhat similar rock occurs at Mt. Camel at the south end of the Colbinabbin Ranges, also at Mt. Stavely, Chatsworth, and Juluka in the Western District of Victoria, also at Howqua River and Dookie," according to Mitchell. (4) It was obviously, therefore, readily available to the tribes inhabiting the Western Districts - the Gurnditjmara and Tjapwurun - and could have been obtained quite easily by the Geelong tribes - the Kurun and the Wataurun - for such neighbouring tribes would meet for corroborees and barter from time to time.

Many of their greenstone axes were, however, of a far superior quality stone than that to be found at these sites. We must continue our search elsewhere and now propose to do so in another direction - north - to consider Mt. William.

"The Mt. William diabase is the outstanding stone material used for axes; it is probably the best example of a high quality axe-stone to be found in Australia."(5) This opinion from Mr. Mitchell is based on many years field work and study of the aborigines' stone implements and on numerous visits to many of their old camp sites, many of which he first discovered. Is it not possible that Mt. William is, indeed, Karkeen? At least it is well worth a walkabout.

Mt. William can be visited easily, and, indeed was by the G.F.N.C. in August 1967. Possibly the first impression gained is of wonder at the huge quantity of chips and flakes which cover such a large area of the hillside. The blanks were quarried and then worked into shape on the site - evidenced by these heaps of chips and flakes - the result of the axe making process. The numerous circular depressions to be seen around the top of the ridge that puzzled me were thought by Mitchell to indicate "where suitable stone has been won". "No hammer-stones of any sort have been

PHOTOGRAPHERS!



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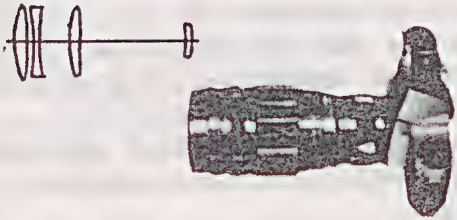

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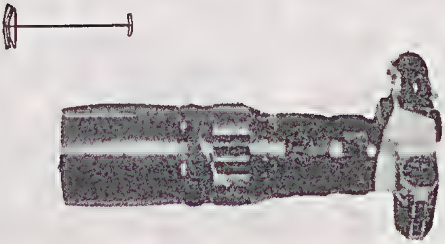

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PICTURED ABOVE ARE LENSES FOR THE ASAHI PENTAX — FROM THE TOP — 135 mm, 200 mm, 300 mm, 500 mm

KARKEEN WALKABOUT (Cont'd.)

found on these sites, so it is reasonable to assume that diabase axes were used in chipping of the blanks. Many diabase axes found show much wear on the hammer end, as if they were used for this purpose .... Also no whetstones have been found in the vicinity, indicating that the grinding of a working edge was not done at the quarries, the blanks being taken away for the final fashioning."(6) In fact it is highly probably that the ideal sandstones of Toorak also in the Wurundjerri tribe's territory were preferred for this purpose.

On this point Buckley's comment is of interest in confirming that the Geelong tribe worked up the fine cutting edge, although apparently with granite, a plentiful supply existing within their territory - the You Yang hills and Anakie district are within fifteen miles of Geelong. Sandstone was also available and very much closer,too,and could well have been used for touching up the edges after wear.

Although these quarries can be inspected and stone axe blanks found the craftsmen making them are no longer to be seen - in fact "none of the early settlers in Victoria appears to have seen the Mt. William aboriginal quarries in operation"; says Mitchell, "possibly the aboriginal quarryman, Billi-Billeri, a headman of the Wurunjerri tribe had ceased operations before the settlers knew of its existence."(7) There would seem little doubt that the early exchange of steel hatchets soon superseded this stone age industry.

For those taking a walkabout to Mt. William the following quotations might add to your appreciation of the site - concerning Billi-Billeri's tribal rights and method used in making axes.

"The family proprietorship of this quarry (Mt. William) had wide ramifications, including more than Wurunjerri people. On the one side it included the husband of Billi-billeri's sister, one of the headmen of the Kurnung-willam, who lived at Bacchus Marsh, and who was named Nurrum-nurrum-biin. On one side it included Ningu-labul, and in another direction Bebejern, the son

KARKEEN WALKABOUT (Cont'd.)

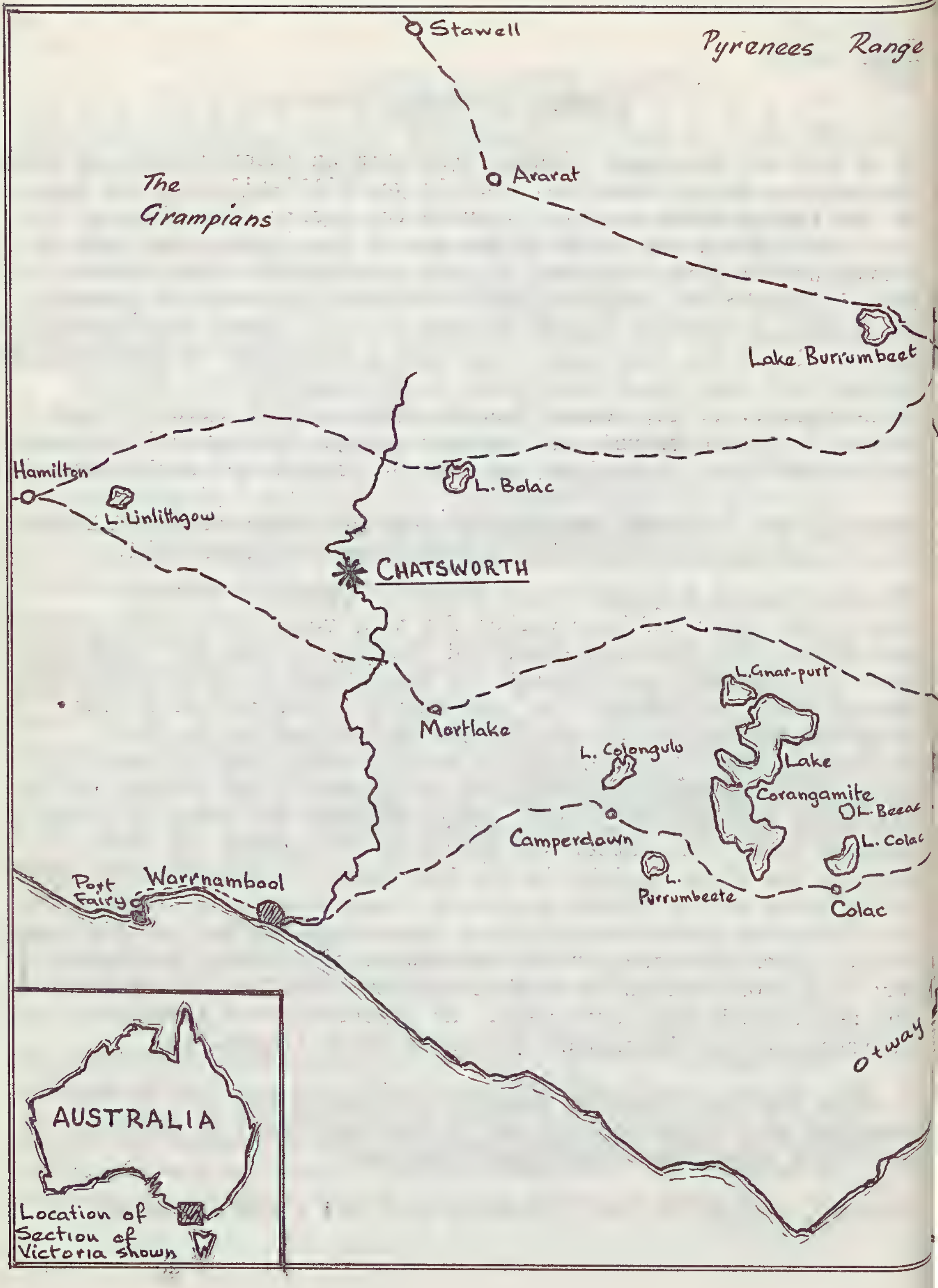
of an hieress in quarry rights, from whom an interest came to Berak through his father Bebejern. But it was Billi-billeri, the head of the family whose country included the quarry, who lived on it. ...... his place was taken by the son of his sister, the wife of Nurrum-nurrum-biin, who came on such occasions to take charge, when it may be assumed, like Billi-billeri, he occupied himself in splitting stone to supply demands......... When neighbouring tribes wished for some stone they sent a messenger to Billi-billeri saying that they would send goods in exchange for it, such as skin-rugs....... if, however people came and took stone without leave, it caused trouble and perhaps a fight between Billi-billeri's people and them. Sometimes men came by stealth and stole stone."(8)

Although the following description does not refer to Mt. William it is possible that the same or similar methods were used.

"We came across a quarry (near Renner's Springs - Central Australia) which had been worked for many years past. The ground was strewn with numerous discarded flakes, because for every one that is considered good enough for use, there are at least a score thrown aside as useless. At this quarry we watched with much interest the process of manufacture as carried out by the Warramunga man. First of all he chose a small lump of quartzite which measured about eight inches in diameter, the surface at one end being approximately flat, whilst towards the other it slightly tapered away. The latter was placed on the ground and then, holding the block upright in his left hand, he gave a series of sharp blows with a little quartzite stone held in his right hand. The first two blows were in spots close together just within the margin, each resulting in the detachment of a flake, in such a way as to form two surfaces that ran down the face of the block and met towards the lower part. As a general rule these two surfaces are not in contact for their whole length."(9)

A whole day could well be occupied in shaping the rock to the required size while another day or two might well be taken to grind the edges down sufficiently for use.

Mitchell thought it also "possible that the block and anvil


Stawell
Pyrenees Range
Ararat
The Grampians
Lake Burrumbeet
Hamilton
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CHATSWORTH
Mortlake
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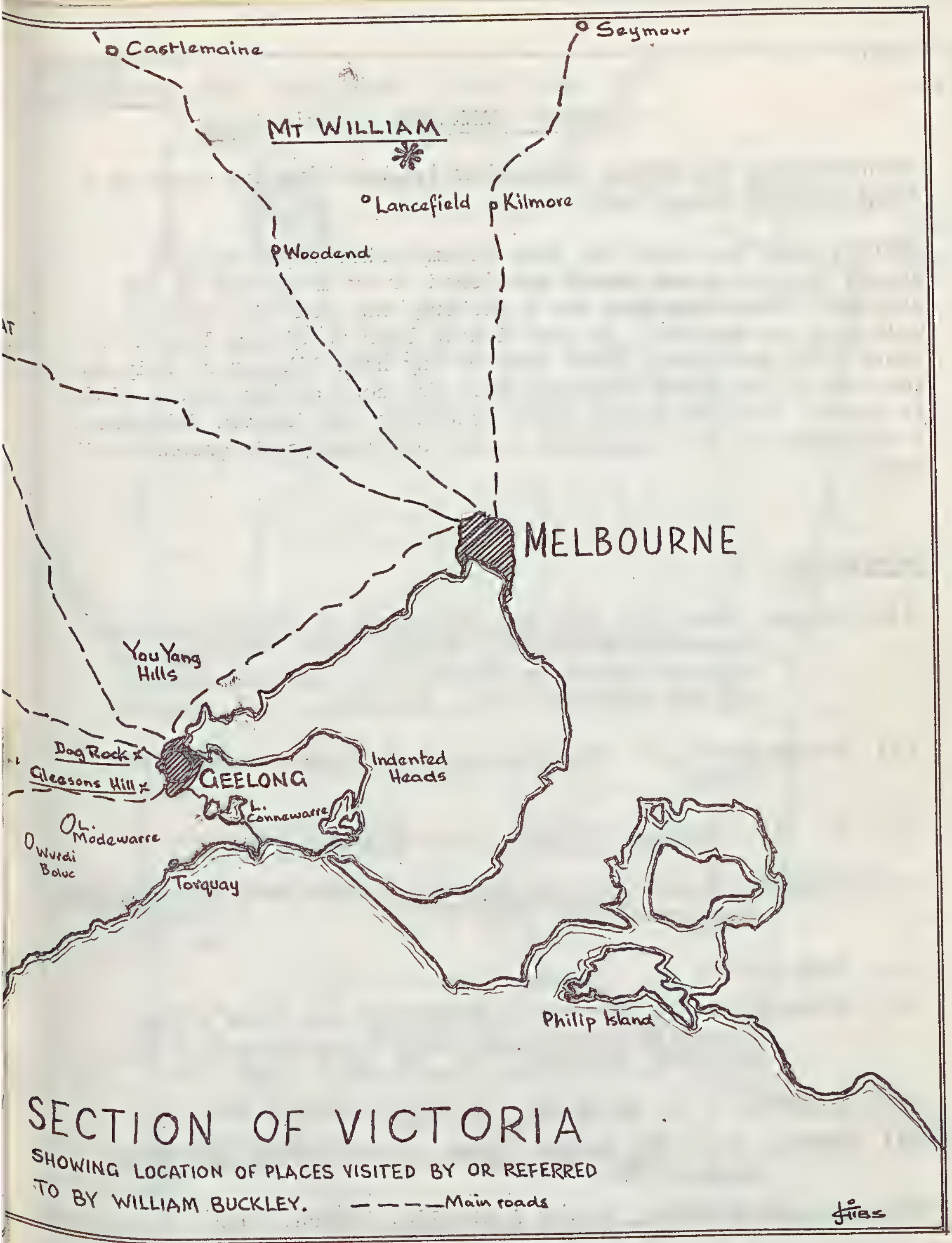
L. Colongulo
Lake Corangamite
L. Beeac
L. Colac
Camperdown
L. Purrumbeete
Colac
Port Fairy
Warrnambool
Otway
AUSTRALIA
Location of Section of Victoria shown



SECTION OF VICTORIA

SHOWING LOCATION OF PLACES VISITED BY OR REFERRED TO BY WILLIAM BUCKLEY. ———— Main roads

KARKEEN WALKABOUT (Cont'd.)

technique was one method used, that is, striking the blank on a large mass of stone."(10)

Whether your walkabout has been accomplished physically by actual visits to the places mentioned or by dreamtime in the armchair tradition, have you a feeling that you have been on walkabout to Karkeen? To date I have been unable to locate or trace this aboriginal place name or any name like it so rely on the sort of evidence presented here for considering that a visit to the Mt. William quarry sites concludes our Karkeen Walkabout, a walkabout to that legendary source of first grade greenstone axes.

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(2) Brough-Smyth, R., The Aborigines of Victoria, Melbourne, 1878.

(3) Op. cit., William Buckley, p.63, note 4.

(4) Mitchell, S.R., Stone Age Craftsmen, Tait Book Co. Pty.Ltd. Melbourne, 1949, page 96.

(5) Ibid., p.95.

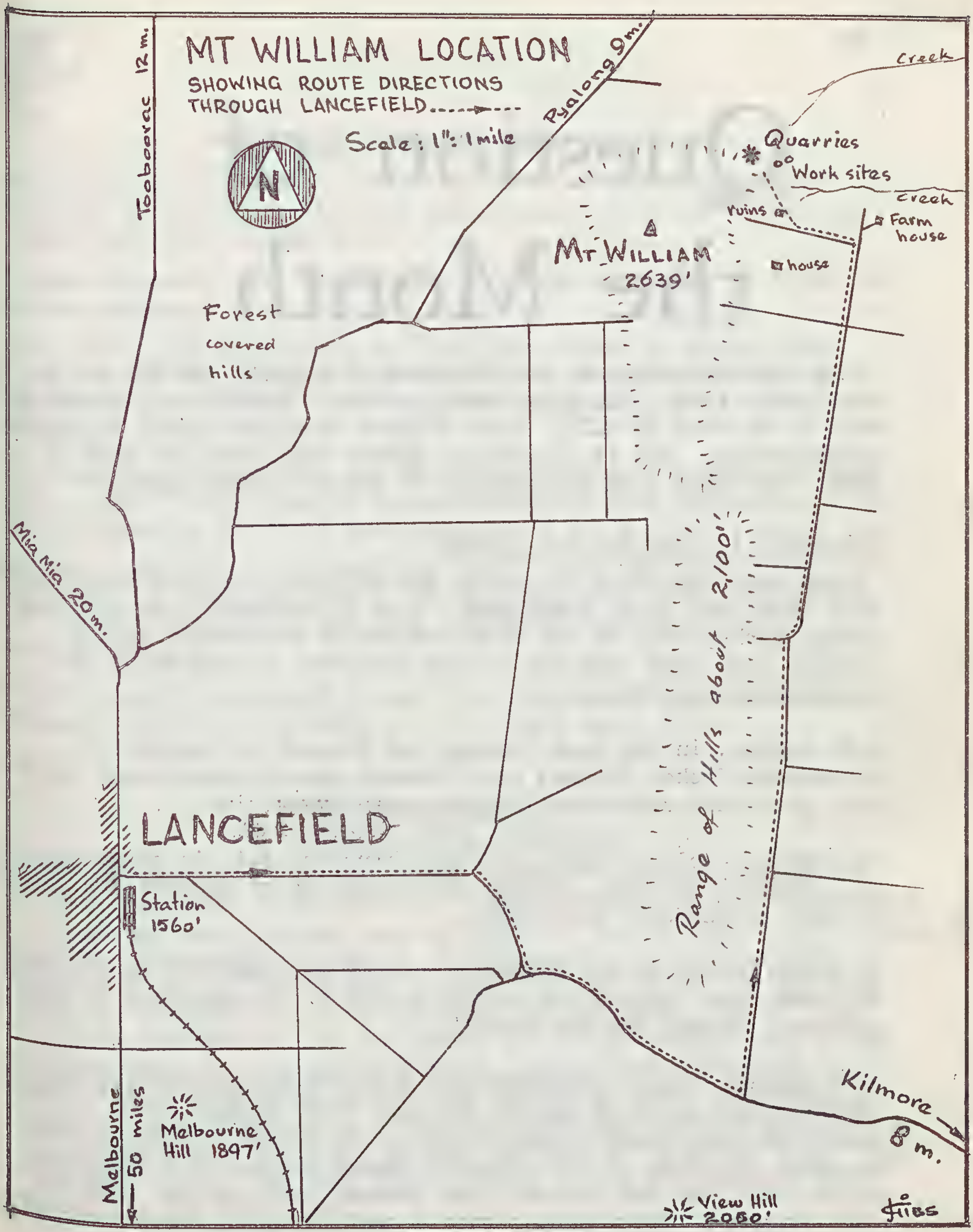
(6) Mitchell, S.R., "Victorian Aboriginal Axe Stone", The Victorian Naturalist, Field Naturalists Club of Victoria, Melbourne, Vol.78, No.3, July, 1961.

(7) Mitchell, S.R., Stone Age Craftsmen, Ibid, p.96.

(8) Howitt, W.A., The Native Tribes of South-East Australia, London, 1904.

(9) Spencer & Gillen, Across Australia, London, 1912.

(10) Mitchell, S.R., The Victorian Naturalist Op. cit., p.73.


MT WILLIAM LOCATION
SHOWING ROUTE DIRECTIONS
THROUGH LANCEFIELD
Scale: 1": 1 mile
N
Toobooroc 12 m.
Pyalong 9 m.
Creek
Quarries
Work sites
Creek
ruins
Farm house
MT WILLIAM
2639'
house
Forest
covered
hills
Mia Mia 20 m.
Range of Hills about 2100'
LANCEFIELD
Station
1560'
Kilmore
8 m.
Melbourne Hill 1897'
Melbourne
50 miles
View Hill
2050'
Gibbs

Question of the Month

This question concerns the fondness of certain animals for a particular food. The questioner states: "Snakes and lizards are said to be fond of milk; blue tongues have been known to relish strawberries; and it is usually agreed that cats are fond of fish. Is there some explanation of these strange tastes?"

The reply is from Mr. E.G. Errey.

There have been more fallacies and tall stories told about snakes than about any other creatures. This is evidently one of them, though perhaps not as far from reality as stories of snakes sucking milk from cows out in the paddocks, a feat which is physically impossible.

D.R. McPhee, in his book 'Snakes and Lizards of Australia' (Jacaranda Pocket Guides) says "Snakes show no preference for milk and, given the choice will drink water every time."

In regard to blue-tongues and strawberries, this is after all not so strange, for their natural diet consists of berries and leaves as well as insects, snails etc.

To quote McPhee again, "Its food consists chiefly of snails, and includes some insects and native berries. In captivity it also consumes bananas and raw meat."

In a garden, snails certainly would be readily available, and strawberries would be almost the only fruit within reach. I consulted some young acquaintances whose lizard collection was recently featured in our Editor's nature column of the Geelong Advertiser, and they agreed that bananas were popular with the blue-tongues. Strawberries that I took along as testing material were licked but not eaten.

QUESTION OF THE MONTH (Cont'd)

Jack Hyett in 'A Bushman's Year' writes "The blue-tongue feeds on vegetable foods, fungi, berries and leaves with a few insects as a tasty variation in the diet."

It seems unlikely that snails would be very plentiful in "Bluey's" natural habitat.

As for the cat's partiality to fish there seems to be no doubt. As the cat is a carnivorous animal this is not surprising, but whether this partiality is exaggerated by comics and similar literature I don't know.

Not having any cats of my own, and not wishing to encourage other folk's cats, I have done no experimenting to find the strength of their preference for fish over meat.

The only reference to the subject that I can find in serious literature is to a painting in an Egyptian tomb dated about 1400 B.C., which shows a cat enjoying a meal of fish under its mistress's chair.

Several books I consulted in the 'Cat' section of the Geelong Regional Library had nothing at all to say about fish.

* * *

BLUE TONGUE LIZARD.

By Joyce Hunt, Paraparap.

Taking the wash-up water out to the garden, I almost trod on the very old, very fat, very slow blue tongue lizard who has been living in our garden for a decade that we know of, and probably much longer. He (or she) is quite big, about 18 inches, and is attractively marked with yellow on his grey back. A little later, he was seen sucking up the moisture - or the particles of food - where I had thrown the dish-water. In the midst of drought conditions, it was evidently difficult to find moisture. Since then he has been supplied daily with a saucer of milk which he seems to enjoy. The wrens also have developed a liking for milk and one frequently sees four or five wrens assembled around the saucer, drinking milk! The blue-tongue lizard has been seen licking up the rolled-oats that were put out for the wrens!

"REQUIEM FOR A WILLY WAGTAIL"

By Oonah McHaffie, Park Orchards

The family, mother and two young had been observed in the paddock for a few days. Mother was busy feeding the two babies, although both were able to fly, and appeared perfectly capable of fending for themselves. Father was not in evidence but was probably somewhere in the vicinity.

A few days later one of the young birds made its appearance on the lawn outside the bedroom window. It was a little while before we noticed that one wing was drooping and almost touching the ground. It gave it a slightly lop-sided appearance. It seemed unable to fly, although it could rise a few inches off the ground before dropping again. It ran rapidly along the ground to catch insects but would frequently fall over in the process through loss of balance.

The little bird was not unduly frightened when we got close to it but, although it would let us get to within a foot or two, it was still too quick for us to catch it for examination.

The mother bird made her appearance a few times but then abandoned it and returned to the paddock to her other offspring.

The courageous little bird fended for itself, and stayed in the garden for four days. During this time it seemed to make its appearance about 9 a.m. and disappear at about 4 or 4.30p.m. We could not discover where it spent the night. This suited us well as, during the daytime hours, I was able to keep my two cats indoors, or at least under surveillance.

We were in something of a dilemma as to whether to leave the bird in the garden where there was risk from the cats but where there was water (rather incongruously - in the cats' water dish) or to try to get it back to the paddock where there was no water at a low enough level for it to drink but where it might have assistance from the parent bird - if the latter was prepared to take over her duties again.

We still had not made any decision when on the fifth day it was missing and, eventually, we discovered it back in the paddock.

"REQUIEM FOR A WILLY WAGTAIL" (Cont'd.)

We did not know how it got there. We did not think it could have got over the fence but there was room under the gates for it to have got through.

Then for a day or so we did not see it until one morning our fears were confirmed. We found it in the paddock, dead, on its back but with no signs of a violent death.

During its time in the garden there had been several days of heat with strong north winds. We wondered if this had taken its toll or whether it had no longer been able to get food and water.

- - - - - - - - - - -

Since writing the foregoing, I read an account in "The Weekly Times" of 22nd November, 1967, of a serious disease attacking poultry. It is leucosis, a virus disease, one form of which attacks the nervous system. With this neural form the main nerves leading to parts of the body degenerate and the muscles become paralysed. The article went on to say that practically any muscle can be affected but the ones most obvious are either those on the wings or the legs. When the wings are affected they drop down and the flight feathers touch the ground. The disease can appear at any age but often strikes birds between 12 and 20 weeks of age. There is no cure and it has to run its course. It is known that some forms of the disease are infectious. Birds are most susceptible when they are youngest.

The above refers to fowls, but is it possible that native birds can contract this disease? It could explain the mystery surrounding the death of our little willy wagtail.

* * *

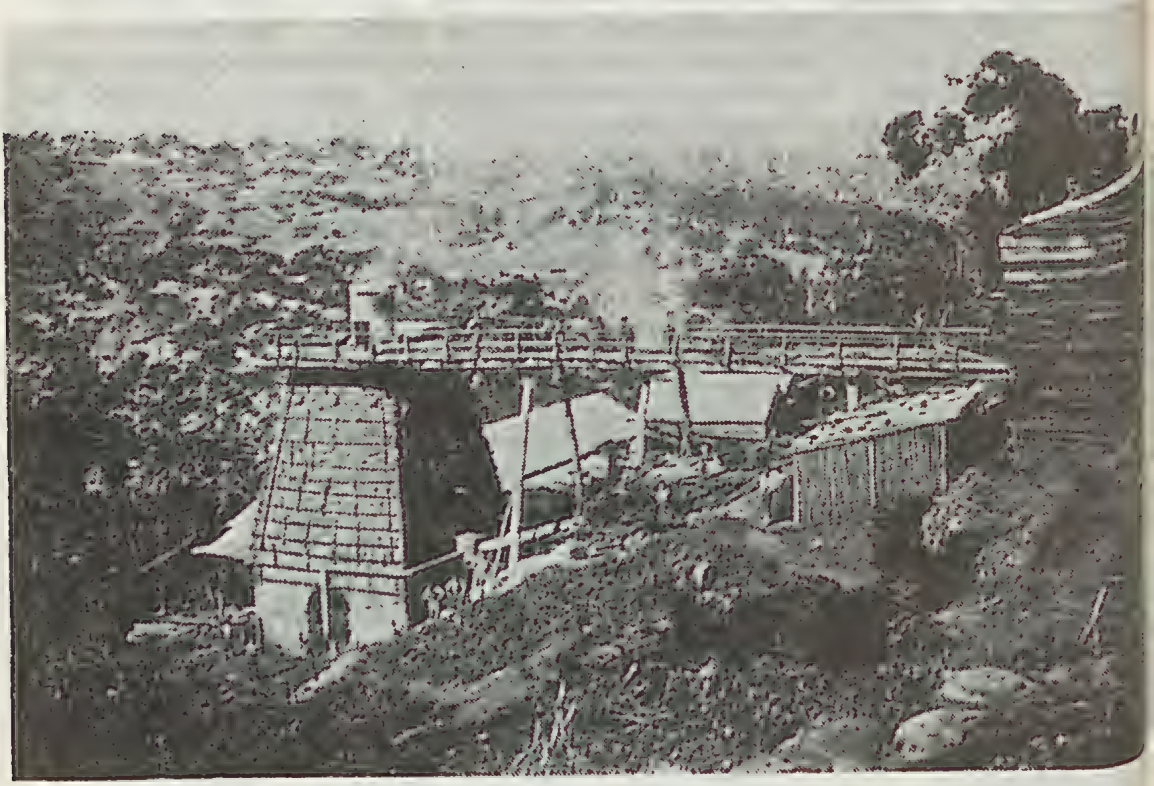
CORRECTION:

The excellent drawing shown on page 22 of the last issue was by MARGOT PEDERSON and not as credited; the Editor apologises for this error.

* * *

CLUB EXCURSION TO HISTORIC LAL LAL

By Jack Wheeler, Excursion Secretary



Iron Smelting Furnace, Lal Lal, 1882.

Mines Department Photograph.

Two large buses were necessary to transport members, their familie and friends to Lal Lal, 15 miles south-east of Ballarat, for our April excursion. Several private cars also attended.

Approaching Meredith four members reported seeing brolgas (native companions) approximately a quarter of a mile off the highway and a little further on, all had excellent views of a large dark colour wedge-tailed eagle soaring close to the highway.

CLUB EXCURSION TO HISTORIC LAL LAL (Cont'd.)

At Clarendon, the Lal Lal road branches east from the highway, and soon we are in attractive bush country. Approaching Lal Lal where the Ballarat-Geelong railway is crossed, flocks of crimson rosellas and several grey currawongs were seen. The station buildings at Lal Lal are a fine example of blue-stone architecture of the early era.

One mile past Lal Lal our first stop was made on the Lal Lal Fall's road, to view the nearby clay pit and examine specimens from road-side storage deposits. Operated by the Ballarat Paper Mills, the kaolin clay is refined and used as a filler for high-grade refined paper.

The pit or quarry revealed large deposits of kaolinised Devonian granite which was due to deep weathering during the hotter and more humid phases of the Quaternary climate. Examining some of the quarried material it revealed the texture and appearance of the original granite but consisted of kaolin (china-clay), quartz, and mica, all the original feldspar of the granite having been converted to kaolin.

Tests carried out by the Mines Department, (memoir 18), revealed that the quality of this clay as being excellent. It does however, contain potassium vanadate, which can produce a yellow discoloration on burnt ware when exposed to atmospheric conditions.

On arriving at the Lal Lal Falls picnic ground a little further on, members assembled for an inspection of the falls area and the gorge immediately below. A well graded track guided the party down into the gorge itself, and it was disappointing that due to severe drought conditions,the stream was completely dry. The fall's drop is 110 feet, and when the stream is flowing, the falls are quite spectacular.

The gorge had been formed over the centuries, by the water flow and the undercutting Newer Volcanic basalt flows. Here is evidence of two separate flows, the lower thicker flow showing coarse columnar jointing, while the upper and thinner flow shows finer jointing. Approximately half way down the gorge pathway, can be seen vesicular basalt, glassy basalt (tachylyte) and limonite.

CLUB EXCURSION TO HISTORIC LAL LAL (Cont'd.)

The gorge track led down to the falls basin which, despite the lack of water-flow, had maintained its level. Several welcome swallows were noticed hawking insects in this region, and also noted were three welcome swallow nests in rock crevices some twenty feet above the basin.

Vegetation of interest here was blanket fern (Pleurosorus rutifolius) tree violet (Hymenanthera dentata), and an exotic plant with large velvet-like foliage,woolly mullein (Verbascum thapsus). Along the sheltered cliff-face, several late flowering blue-bells were still in flower.

Moving out of the gorge and around to the top of the falls, an area where 'nardoo' is usually very abundant, a search revealed only an odd plant. Further up-stream, members were taken to see a group of very bedraggled 'Austral anchor plants' (Discaria australis). Unfortunately someone had made an attempt to burn out the plants, and despite being badly damaged, appeared to be shooting strongly.

During lunch several flame robins were noted. Several skinks sp. were found by boys of our group. After lunch our buses transported us three miles to the east of Lal Lal down a very steep and windy track to the historic 'iron mine'.

The site of the mine is in thickly timbered eucalypt forest high on a ridge overlooking the Moorabool River. This area had suffered a bad fire some months ago and the foliage was just recovering with fresh green shoots.

It was here that in 1873, the Lal Lal Iron Mining Company commenced operations with a capital of £10,000, and the iron ore deposits quarried and smelted, transported to Ballarat foundaries.

The ore, a bog-iron ore, composed of limonite, resulting from the deposition of hydrated iron oxide produced by the decomposition of the Newer Volcanic basalts - moderately extensive and recent estimat indicate two million tons of ore 49% iron (surface grade), and 10% silica and alumina - hardly sufficient and worthwhile for mining these modern times.

The first blast furnace was built in 1874, and by early 1876, 110 tons of pig iron had been produced. The company manager was Mr. E.H.L. Swofte.

CLUB EXCURSION TO HISTORIC LAL LAL (Cont'd.)

For the furnace, charcoal was obtained from local eucalypt forest, whilst limestone was transported from Geelong.

By 1877, the plant was capable of handling 70 tons of iron weekly, and during it's first three years of operation, 518 tons of ore was mined, and 237 tons of pig iron of several varieties produced, which included mottled and white iron of low silicon content and being used mainly for the manufacture of stamping batteries for the then flourishing gold mining industry.

It was in 1879 that the John Walker's Union Foundry of Ballarat used iron from Lal Lal to cast the iron fence still standing around St. Patrick's Cathedral of Ballarat.

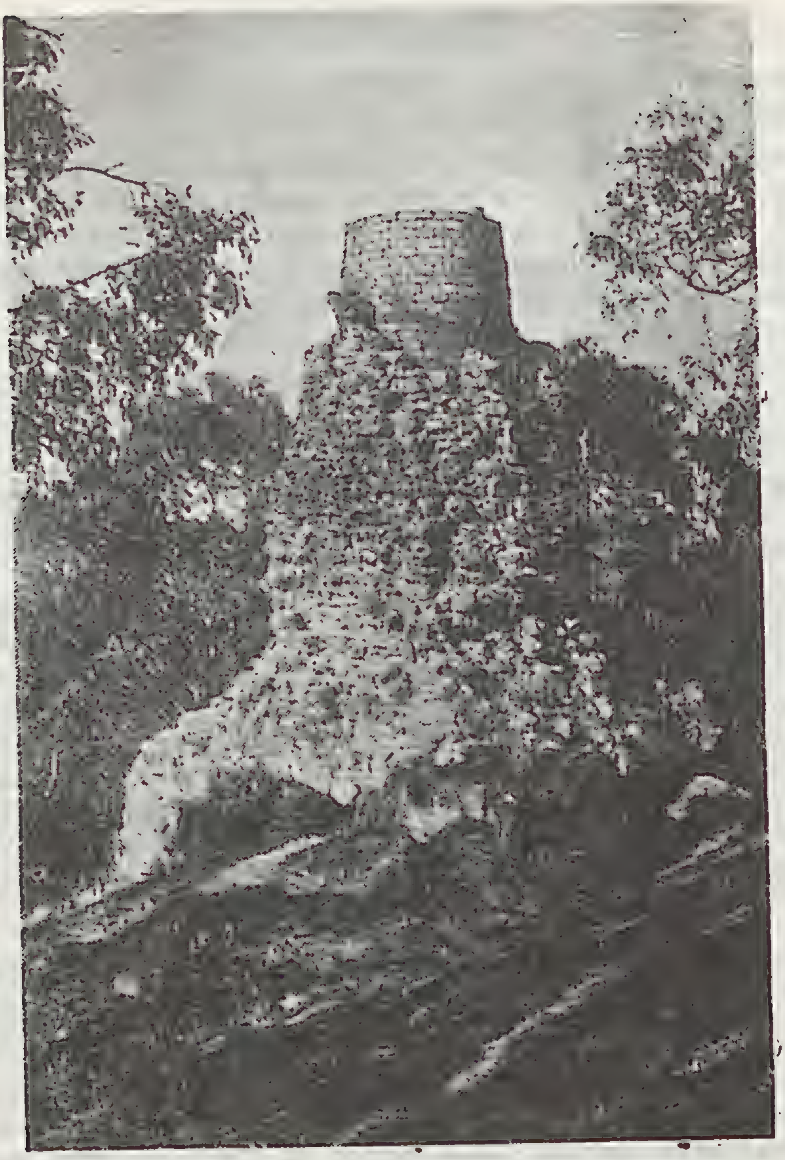
During 1880, a larger blast furnace, the one still standing, was built and even today the firebricks imported from England, bear the stamp of Pearson's of Stourbridge.

This Lal Lal company suddenly collapsed in 1884, after reaching a stage of peak production of 1600 tons of ore smelted and 800 tons of pig-iron. Competition of imported English produced iron which sold at £4.10.- per ton as compared with the price of £10.-.- per ton for the local product, soon affected trade and the market for Lal Lal pig-iron slumped badly. As a counter to this, Lal Lal commenced casting activities which proved to be in competition to the foundaries which had previously supported them. This resulted in a boycott from the Ballarat foundaries, and the Lal Lal Company closed down and plant and equipment was sold.

Today, the finely preserved blast furnace is a fitting monument of historical importance to the pioneering of the early days of settlement. In the near future it will witness further great activity immediately below as the new Bungal reservoir takes shape for the storage of the Moorabool's water to supply Ballarat and Geelong. It is to be hoped that the Ballarat Historical Society which is so vitally interested in the preservation of the mine area and the furnace, will be successful in having it's plans implemented.

By mid-afternoon on the day of our visit, steady rain had set in, and our departure from this interesting area had to be hurriedly terminated and the buses travelled back to Geelong via Mt. Doran, Durdidwarrah and Anakie. This was a pleasant climax to an interesting and memorable excursion.

Leaders: Stan Rowe and Jack Wheeler.



Ruins of Iron Furnace, Lal Lal, 1908.

Photographs in this article by courtesy of Mines Department.

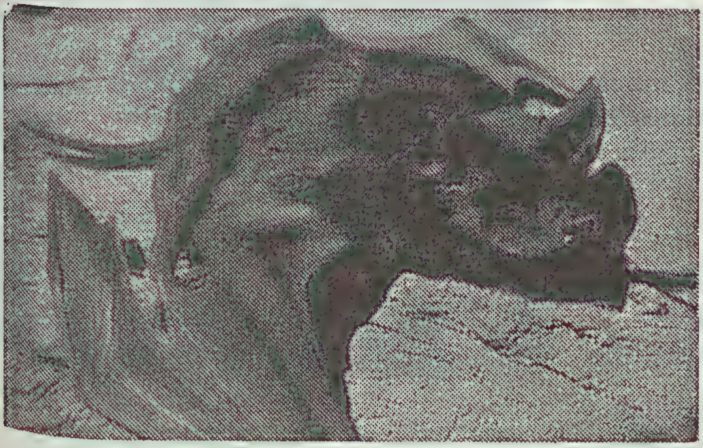
AT RANDOM

WHITE-STRIPED BAT (Nyctonomus australis): by I.R. McCann, Stawell.

On 15th February, 1964, Mr. F. Stewart who has a property near Fyans Creek to the west of Stawell brought me a fine specimen of the White-striped Bat.

He had fallen a large Red Gum on his property and about thirty of these bats spilled out of a hollow in the trunk near the top when the tree fell and the trunk broke. About a dozen flew away but the remainder stayed scurrying about on the ground. He stated that wherever he stood the bats made straight towards him.

The Bat which he brought to me was a rich red-brown in colour with a wrinkled upper lip, a pig-like snout, a gular sack and a pure white stripe on each side of the ventral surface extending from the arm to the thigh. The tail was long and thick and extended well beyond the edge of the uropatagium.



White-striped Bat
Photo by Ian McCann.

Editors Note:

One of this species was found at Mannerim in January, 1965.

AT RANDOM (Cont'd.)

TREE-CREEPER BATHING: by Ellen M. McCulloch, Mitcham.

Not a great deal seems to be recorded on the behaviour patterns different birds exhibit when bathing. I recently saw a White-throated Tree-Creeper (Climacteris leucophaea) bathing in a road-side dam near Walhalla. The dam was about 10 feet wide by 20 feet long, 4 inches deep in the centre.

I don't know why I expected the bird to dash in and out of the water like a honeyeater. Instead it flew down to the edge where the water was one inch deep, squatted there, and bathed vigorously with feathers fluffed out, showing the beautifully delicate breast markings very distinctly. It dipped its head right underneath the water surface, and with wings beating vigorously showered water over itself. It then flew to a tree-trunk, landing 6 feet from the base and clung there, shook its feathers, preened a little, then flew back to the same spot in the water. It bathed again in the same manner, with the head feathers so wet that they stuck together like a crest. It flew up again to the same spot on the tree and shook itself very hard, with the body swinging out from the tree-trunk, to which it was clinging with those enormous feet. It then flew back to the same place in the water, squatted again, and was bathing when a passing car caused it to fly off into the forest.

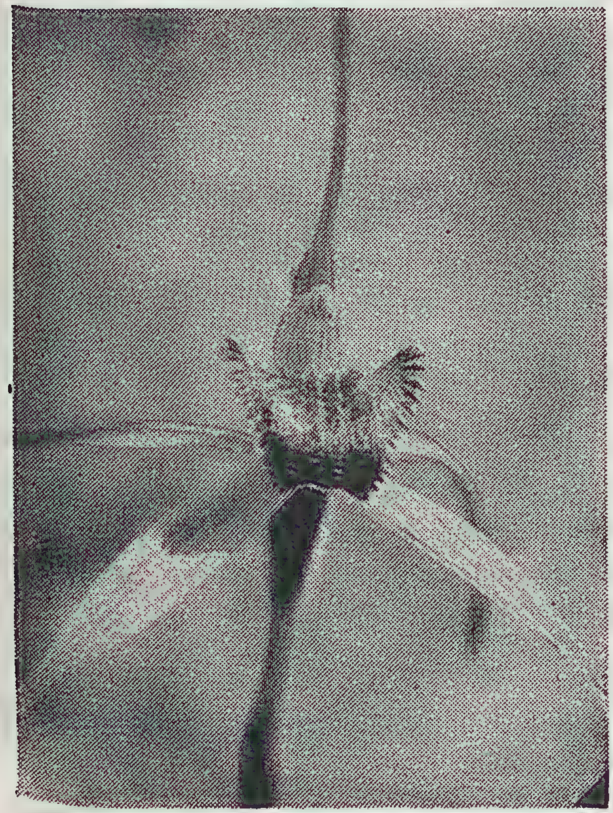
From the light rather hesitant 'pink-pink-pink' calls repeated each time the bird was bathing, I had the impression that it was immature. It had no red eye-mark.

BIRDS AT PARAPARAP: by John Hunt, Paraparap.

Our summer house lived up to its name Terrigal (aboriginal for Place of Little Birds) one recent Sunday afternoon when the following birds were observed from our garden:-

14 Wattlebirds, 11 Gang-gangs, 2 Mudlarks, 2 Grey thrushes, 1 Eastern Spinebill, 2 female Flame Robins, White-plumed Honeyeaters, numerous Blue Wrens, several Swifts, numerous Goldfinches, 2 White-faced Herons, several Magpies, 2 Kookaburras, 5 Rosellas, 2 Wagtails, 6 Redback Parrots, as well as the usual Swallows, Sparrows, Starlings and a Raven.

Junior Pages



Spider Orchid

Photo by Geoff Gayner

ORCHIDS:

As promised in the Junior Pages of our last issue, we will have a look at those wonderful little plants, the Orchids, to find out a little of their habits and life.

Orchid flowers are usually beautifully shaped and colored, and a wide variety of types makes it hard to describe the various parts of the flowers; there are six "petals", using the word petal in a general sense, and the different families of orchids have the petals grouped differently.

In each case, however, one petal is very different from the other five, and it is called the tongue or labellum; the remaining five may be in groups of two and three, four and one, or all five may be alike.

The greenhoods have three petals forming the hood, two appearing as "ears", and the sixth as a tongue; with the "pink fingers", there are four alike in front, and one behind the tongue. Each group of orchids seems to have its own arrangement of petals.

JUNIOR PAGES (Cont'd.)

In addition, the pistil and stamens are not separated as in most flowers, but are combined; and these too are often beautifully shaped and coloured.

Orchids produce very large numbers of seeds, but these germinate and grow only with the assistance of a type of fungus; so vast is the number of seeds that if all grew, we would soon be overrun with orchids!

It is virtually impossible to grow orchids in cultivation from seeds, and most orchid growers rely on multiplication of the bulbs or tubers from which the plants grow, to increase their number of plants

Have you noticed how a bean seed grows - the first growth is a pair of thick, fleshy leaves? Orchids, along with grasses (wheat for example) and some other plants have only one seed-leaf - botanists call these plants monocotyledons, a word which means "one seed leaf".

What else do you know about orchids? Examine the flowers that are on display at nearly every meeting or excursion, to see if you can notice these features of them - the different petals, the labellum or tongue, the seed cases perhaps, and if possible the leaf that first grows from the tuber.

They are, after all, the most popular flower we have.

* * *

In the next issue, we will have some notes on reptiles - what can you tell me about lizards and snakes you may have seen?

Remember - we need your notes to fill these pages too. It is up to you to show that you are interested in these pages.

* * *

Have you found your first birds' nest this season yet? Plovers, Ravens and Magpies should all be nesting by now - have you seen any nests this year?

* * *

REMEMBER - Junior Lectures are held at 7.30p.m. prior to each Genera Meeting which is held at McPhillimy Hall, Latrobe Terrace, Geelong, on the first Tuesday of each month.

OFFICE-BEARERS 1968-69.

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Mr. O. Andrews, 18 Margaret Street, North Geelong. 3215.
(Phone: 7.2759)
Mrs. B. Quirk, 36 Fairview Avenue, Newtown. 3220.
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Published by
THE GEELONG FIELD NATURALISTS
Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in month, at 8 p.m. at the Reformed Presbyterian Church Hall, Fenwick Street, Geelong.

Visitors Welcome.

All papers submitted for publication in this journal should be sent to the Hon. Editor.

Vol. 5 No. 4 January 1969 Price 25c

GEELONG NATURALIST

Journal of the Geelong Field Naturalists Club

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Hon. Editor: Trevor Pescott

Registered at G.P.O. Melbourne. for transmission by post as a periodical

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

MEMBERSHIP

Membership of the G.F.N.C. is open to any person interested in Natural History. The 'Geelong Naturalist' is distributed free to all members, and the Club's reference and lending library is available.

Subscription Rates are:
(Due on 1st April)

	Per Annum.
Adult Membership	$2.00
Joint Membership	$3.00
Junior Membership	50¢
Subscription to Magazine	$1.00

COVER PHOTOGRAPH:

Venomous Ringed Octopus from Torquay

by Trevor Pescott.

GEELONG NATURALIST

Vol.5. No.4. January 1969.

EDITORIAL

The article in this issue on the policy of the Forests Commission of Victoria to control-burn the forests in this state is extremely timely, for we have just experienced a day of devastating fires around Geelong.

Although most of the area burnt was private grazing land, the Forest Commission of Victoria controlled You Yangs suffered severely, with the East Flat being hardest hit. Most of the trees planted on that Flat by the Bird Observers Club and the Geelong Field Naturalists Club have been burnt, a loss not only of trees but of years of work.

Could this have been averted if the You Yangs had been control burned?

The arguments put forward by Mr. Hodgson in his article represent a vast amount of research; but can the long-term effects be gauged so soon - could it be possible for example, that a regular (say 5-yearly) burn may over-stimulate the orchids and cause their eventual extinction?

Is it possible that our eucalypts which regenerate beautifully after a fire may not be capable of continued regeneration?

Perhaps as far as wildlife, the flora and fauna, is concerned, one big fire each second decade may be far better for regeneration than more regular low intensity burns.

Time will tell, but in the meanwhile, read closely the article on the next page, and try to decide for yourself.

TREVOR PESCOTT,

Hon. Editor.

FIRE IN THE FOREST

By A. Hodgson

INTRODUCTORY COMMENTS - by Alan Lonsdale.

In the April, 1968, issue of the Geelong Naturalist, the practice of controlled burning in the Grampians and other bushland areas by the Victorian Forests Commission was criticised[1]. The main comments were that the natural beauty of the area was spoiled, flora and fauna were damaged, undesirable species of vegetation flourished after fire, and, in general, ecological relationships were upset. In March, 1968, Mr. Athol Hodgson, Fire Research Officer with the Victorian Forests Commission, delivered a talk to the Geelong Group of the Society for Growing Australian Plants on the subject of controlled forest burning, and in the course of which many of these criticisms were refuted. The following article is based on this talk.

1. Carr and Lonsdale. "Notes on the Grampians Flora - Part 2." Geelong Naturalist, 5,1, April 1968. pp. 19-20.

The role of fire in the ecology of the Eucalypt forests of south eastern Australia prior to colonisation by Europeans is not well understood. But there is plenty of evidence that fire has been a force in the forest environment for thousands of years. This can be inferred from a large number of formal ecological studies reported in scientific journals. Direct evidence comes from charcoal in river deposits, charred wood in the ground and historical records which describe the fires seen by early explorers. But perhaps one of the most remarkable pieces of evidence that fire has been a significant factor in the forest ecology is the development of certain physiological features of the genus Eucalyptus which allow it to live with fire. These include

(i) dormant buds on the trunk and branches which produce epicormic shoots and leaves if the crown is destroyed,

(ii) lignotubers which produce new shoots when the stem is killed and,

(iii) a thick heat resistant bark which protects the cambium.

FIRE IN THE FOREST (Cont'd.)

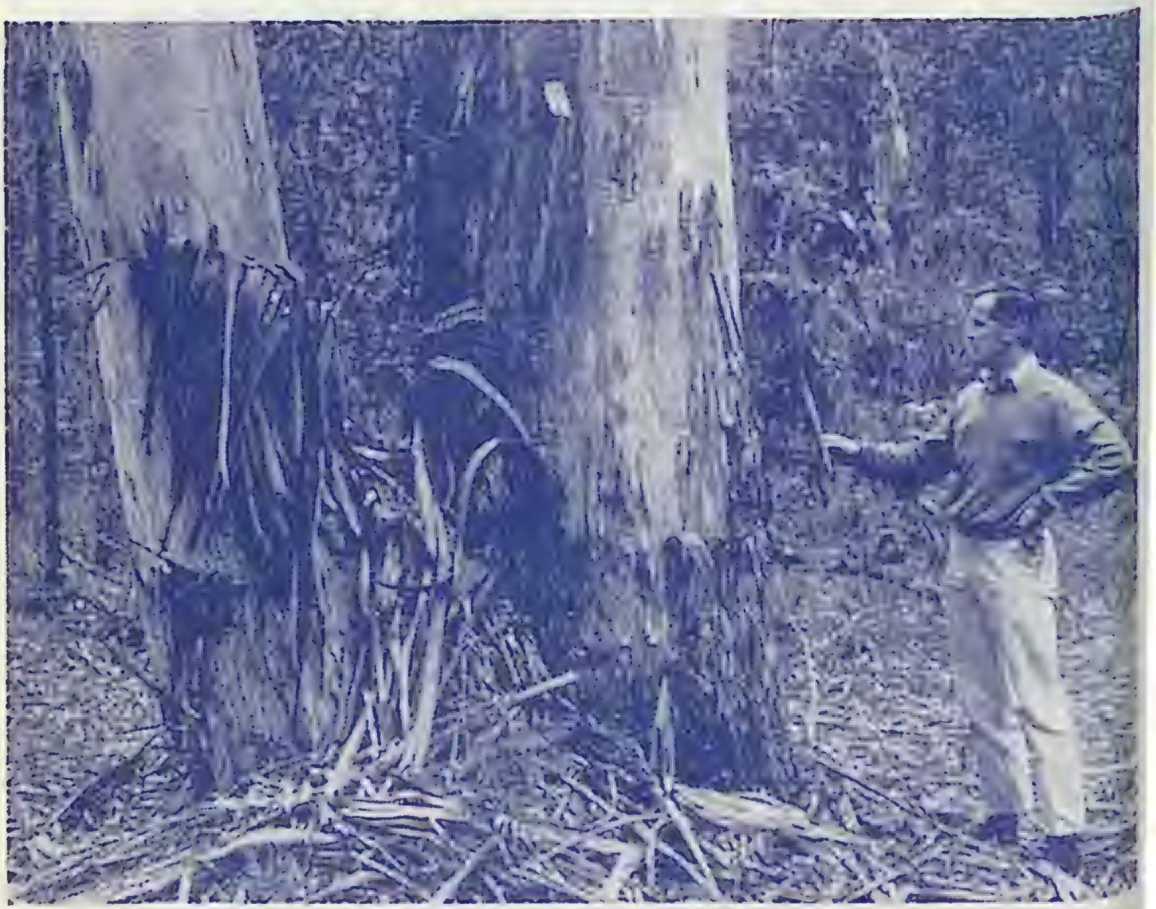
These features are well developed in species that grow in a climate where fire is common. They are less well developed in species that grow in a climate where fire is rare. Mountain Ash is an example of the latter. But even this species is ecologically adapted to fire. It fails to regenerate unless a good seedbed is prepared and neither nature nor man has ever had much success in providing a good seed bed without the aid of fire. Without fire this species is eventually replaced by other types of vegetation. A hot devastating fire kills a Mountain Ash forest but ensures its replacement by providing a receptive seedbed for regeneration of a new crop. If any further evidence is needed to suggest that fire has been in the forest for thousands of years it is only necessary to reflect on the fact that each year in south eastern Australia a hot dry climate cures a flammable forest fuel. Lightning and the hunting fires of aborigines made widespread fires a certainty in this environment.

Before colonisation occurred it seems likely that fire, wildlife, flora and the aborigines existed together in some sort of balance. This balance may not have been static nor need it have been beneficial to all the values concerned. This is history now and is only of interest to us today in so far as any lessons learned can be applied in the circumstances that exist today. These circumstances are quite different from those that existed before colonisation. In the first place the area of forested land over which wildlife and plant populations can move has been reduced. In other words, habitat has been restricted. The composition of the forest has been changed. The form and density of some tree species has been altered and some new species have been introduced. Also the demands of modern society had created values that did not exist before colonisation. Clear water, recreation and straight trees are some of these new values.

The role of fire in this changed environment is quite different from the role it played prior to colonisation. It is perhaps impossible at our present stage of knowledge to present a complete and well balanced account of the effects of fire on all forest values. But a great deal is known and new facts are emerging almost daily as many fire ecology research projects develop. If forest land is to be managed effectively to produce the products that the community needs,then these fire effects must be understood and interpreted in terms of the forest values involved.

Before we can attempt to evaluate fire effects it is necessary to

FIRE IN THE FOREST (Cont'd.)



Heavy fuel accumulation of deciduous bark from Eucalyptus trees.

Understand that fire is a release of energy and that energy does work. The effect of a fire on the environment is determined by the amount and rate of energy released. In Eucalypt forest fuel the amount of fuel burned has an enormous influence on fire behaviour. Doubling the amount of fuel burned doubles the rate of spread of the fire and increased its intensity four times. This happens without any change in weather or fuel moisture content.

FIRE IN THE FOREST (Cont'd.)

Result of fuel reduction burning in Eucalypt forest.

Eucalypts are prolific shedders of dead material. Litter fall of more than 2-1/2 tons/acre/annum has been measured and even after losses due to decomposition are subtracted the build up can be as much as 1-1/4 tons/acre/annum. There is no evidence that this build up ceases in time. There is good evidence that the amount of litter beneath a Eucalypt Forest is still increasing twenty years after a fire. By this time there may be ten to twenty tons per acre of litter on the ground. When the energy contained in this amount of fuel is released

FIRE IN THE FOREST (Cont'd.)

suddenly by fire,enormous damage is done. Wildlife is killed, timber is damaged, erosion occurs and, all too frequently, lives and property are lost.

The control of high intensity fires is severely aggravated by spectacular "spotting" which is the result of the amount and physical character of bark in the litter. "Stringybark" and "candlebark" can comprise more than 30% of the total litter. This bark has some remarkable aerodynamic properties and it lifts readily in a convection column over a fire. It will carry long distances downwind and start spot fires ahead of the main fire front. "Spotting" up to 18 miles ahead of the main fire has been recorded. When this happens no reasonable amount of man and machine power can match the energy released by the fire. There is very little that can be done until either the weather changes or the fire runs out of fuel. This is not a defeatist attitude. It is a realistic appreciation of the facts.

The number of fires which develop this extreme behaviour is quite small, certainly less than 5%. The remainder are controlled by a very efficient fire control organisation. But the few high intensity fires cause most of the damage and despite improvements to detection systems and access and despite the latest developments in equipment, technology and firefighting techniques these fires have not been eliminated. It seems they are inevitable when drought dries out heavy fuel accumulations.

If we look at the problem of these fires in its simplest terms, it consists of three things

(1) the weather which dries the fuel
(2) something to start the fire and
(3) the amount of fuel available for burning.

There is not much that can be done about the weather and despite the best intended legislation and publicity against fire, fires still start. But the fuel can be altered and it is here that there is a real chance of doing something to reduce the damage done by wildfires. If the fuel is to be altered or reduced over large areas,then fire is the obvious tool to use. The planned application of low intensity fire over a designated area to reduce fuel and at the same time do little or no damage to forest values is known as control burning in Australia. It is not the purpose here to describe how this is done but to give some reason

FIRE IN THE FOREST (Cont'd.)

why it is done and what is known about its effects on forest values.

The effect of control burning on reducing the area burned by devastating wildfires is well understood and there are now many instances where spectacular saves have been due to control burning. This, however, may not be enough to justify the practise over wide areas if control burning itself is causing damage to the forest. This is the problem that worries many people particularly those interested in flora and fauna.

There is no doubt that control burning alters the forest environment. The key questions are just what is being altered and how. Is it altering a natural environment in which all the values are in some sort of balance or is it altering something that is not natural? It seems likely that the heavy fuel accumulations that are found in many forests are not natural but are the result of forest practices and the exclusion of fire from the forests. There is no doubt that the accumulation of fuel itself causes a change in environment and there are many instances where this change is detrimental to wildlife and plant communities. If it could be guaranteed that all fire could be kept out of these fuels then the fuel buildup might be tolerable. But of course this cannot be guaranteed and as fuels get heavier the chances of a wildfire increases. When Eucalypt fuel gets to 15 tons per acre a fire is uncontrollable in moderate fire danger weather. There are just too many moderate, high, very high and extreme fire danger days to expect that fire can be excluded from these forests forever.

If control burning alters this unnatural fuel, it is not too unreasonable to expect that the change is in the direction towards what was the original condition of the forest floor. It cannot be assumed that this is good for all biological and physical aspects of the forest but if we take a careful look at what is known about fire effects in the forest then it is immediately obvious that fire is not nearly as destructive as many people believe. In fact, as this story will attempt to show, there are many values within the forest which actually require fire for their very existence and without fire in some sort of frequency the value is lost.

Let us consider some of these values more specifically.

FIRE IN THE FOREST (Cont'd.)

Wildlife

The effect of fire on wildlife must be looked at in terms of effect on habitat. It is not significant that wildlife can be found on a burnt area a day or so after the fire. Neither is it significant to find a few dead birds and animals in the fire. The change in the habitat determines whether or not wildlife populations thrive or decline after a fire and it is only in these terms that fire effects can be judged.

There is little doubt that wildlife populations are resilient to fire. The resilience depends much on their ability to move away from flames as a fire passes and to take advantage of both unburnt and burnt country for shelter and food after the fire passes. A real danger to wildlife populations from fire exists because they are weakened by land use practices such as farming which has reduced the area of habitat and restricted their ability to move. The Helmeted Honeyeater of Western Gippsland in Victoria is a good example of this. It once ranged over forested land in West and South Gippsland. Land clearing within its normal habitat has restricted the birds to timbered roads and watercourses in a small area of West Gippsland. It is now in a condition where a single high intensity fire could wipe out the whole population.

Many instances are known where fire and wildlife are compatible. Bandicoots, Emus, Wallabies, Lyrebirds and Quail are all known to seek and use burnt ground. Parrots feed on the vegetation which responds to fire. Kangaroos are being reported in increasing numbers in Messmate-Gum forests of Central Victoria where fuel reduction burning started in 1960.

Leadbeaters possum which has been rediscovered in Victoria after being thought to be extinct for 80 years requires regenerating Mountain Ash for its habitat. Neither man nor nature has had much success in producing this habitat without the aid of fire. The direct benefit of fire to this animal is obvious.

Minor Vegetation

Ground vegetation is a necessary value in the forest environment. It provides habitat for wildlife and is essential for recreation. Many interesting species respond favourably to fire. Colonies

FIRE IN THE FOREST (Cont'd.)

of Pink Heath, Victoria's floral emblem, deteriorate if not burned for seven years. Thryptomene becomes woody and unattractive without burning. Poa grass revegetates Messmate-Gum forests in Central Victoria after repeated fires. Acacia and Daviesia can be managed by the frequency with which the area is burned. An Orchid survey in forest at Daylesford in Victoria produced the following results.

ORCHIDS. Population Survey

	Before Burn 1964-1965	After Burn 1966-1967
Greenhoods.	Pterostylus nana	
	" nutans	No change
	" longifolia	
Musk orchids.	Caladenia angustata	
	" carnea	Up 20%
Giant Waxlip	" caerulea	
Sun Orchid.	Thelymitra media	No change
Cinnamon Bells.	Gastroidea sesanoides	Up 25%
Hyacinth	Dipodium punctatum	Up 25%
Copper Beard	Calochelus campestris	No change
Bird orchid	Chiloglottis gunnii	
Leek orchid	Prasophyllum odoratum	Up 300 to 400%

Two orchids, Mosquito orchid and Parson's Band which were not recorded on the plots before burning, appeared after burning.

An area 80 miles north of Melbourne provided a magnificent display of wildflowers in 1966 and 1967. This was a result of a large fire in 1965. The fact that the same fire killed seven people highlights the fact that fire can be both good and bad depending on the values involved.

It is no coincidence that two famous wildflower areas, the Grampians in Victoria and the S.W. of Western Australia are areas where prescribed burning and accidental fires are common. The West Australian Kangaroo's Paw has even appeared on burned areas within pine plantations.

FIRE IN THE FOREST (Cont'd.)

Timber quality and Increment.

The effect of fire on Mountain Ash in S.E. Australia is well known. Trees killed in 1926 and 1939 are stark evidence of the damage that can occur. Even low intensity fires during the life of trees of this species seems incompatible with timber values.

Fire effects on more resistant species are less clear. They are obviously a function of fire intensity and frequency of occurrence. Wildlife effects on Messmate-Gum type forest in Victoria are illustrated by these figures taken in the second year after a fire:

INCREMENT MEASUREMENTS

Messmate-Gum	Log volume increment:	Su.ft/acre/annum
	Burned (3500 BTU/sec/ft.)	unburned
SQ II	83	250
SQ III	19	75

Fire intensities below 100 BTU/sec/ft in the same forest have had no effect on increment.

Other research projects in Western Australia and Victoria indicate that if the scorch height from a fire is kept below the level of the leading tip of the tree no loss of growth results.

Soil and water

Control burning produces a very insignificant temperature rise in the soil. Certainly not enough to have any physical effect on those soil characters which affect erosion and water runoff. Control burning has been shown to have no effect on surface runoff. It apparently increased stream flow. It may also increase the solid content of any surface runoff that does occur. This could be a bad thing if the whole catchment is burned. This is unlikely in a properly executed burning programme. Wildfires will burn whole catchments and their effects are known to be bad.

Recreation

The effect of control burning on aesthetic and recreating values can, in the short term, be detrimental. Black stems, burned

FIRE IN THE FOREST (Cont'd.)

wildflowers and dead scrub are not attractive to those who use the forest rarely. But this appearance is short lived and must be looked at as an ecological change in the environment rather than a destruction of values. The forest environment is dynamic and is always undergoing change. It can be changed by fire and it will change if fire is excluded. This latter fact is often overlooked, but it is important because the change can be just as detrimental to some values as if the area was damaged by wildfire. This point is well illustrated by the following quotation of the Chief, Northern Forest Fire Laboratory, Missoula, Montana (Time Newsmagazine, September 15, 1967) speaking about Wilderness areas in the northern Rocky Mountains.

> "Fire has played an important part in building our beautiful wilderness areas. It has come through the forest harvesting, destroying old stands and making way for new ones. If we remove fire 100%, we may destroy rather than protect our wilderness areas."

This is a very penetrating thought which all people who are interested in nature conservation should consider when they advocate protection of natural assets on forest land. Foresters have considered it in their studies of ecological changes brought about by fire and other forest management practices. As a result of their knowledge of these changes and the forces that cause the changes, foresters use fire where it is an essential tool in forest management, and they attempt to exclude it as an undesirable force when and where its effects are bad.

* * * * * * *

PHOTOGRAPHS REQUIRED BY EDITOR

Photographs for use in future issues of "Geelong Naturalist" are urgently needed by the Hon. Editor; photographs should be sharp in detail, of good contrast, and printed on glossy paper to the finished size. They should have the title, locality and photographer's name written clearly in pencil on the back, so that appropriate credits can be made when the photograph is used.

* * * * *

GEELONG FIELD NATURALISTS CLUB: FOURTH FIELD OUTING:MARYSVILLE OCTOBER 18th., 19th., & 20th.

By Jack Wheeler.

Personnel List: Mr. O. Andrews, Mr. & Mrs. W. Anderson, Miss M. Arthur, Mr. & Mrs. J. Bell, Craig Bell, Miss G. Buckland, Mr. & Mrs. R.T. Buzaid, Mrs. B. Campbell, Phillip Campbell, Mr. & Mrs. L. Elms, Mr. & Mrs. E.G. Errey, Robin Errey, Mr. & Mrs. N. Gillham, Mr. & Mrs. F.W. Grueber, Helen Grueber, Rosemary Grueber, Miss L. Hill, Mr. H. Jennings, Wendy Jennings, Wayne Jennings, Jenny Jennings, Mr. Z. Joksimovic, Mr. & Mrs. S. Knox, Allison Knox, Peter Knox, Ian Knox, Kees Koppelaar, Mr. & Mrs. R. Lavery, Mrs. G. Layland, Mrs. H. Lomas, Mr. & Mrs. G. McCarthy, Jill McCarthy, Glenn McCarthy, Mrs. N. McNie, Peter McNie, Mr. G. Mathison, Mr. & Mrs. H. Pescott, Mr. T. Pescott, Miss E. Poole, Miss F. Poole, Mr. & Mrs. N. Povey, Mrs. B. Quirk, Mrs. F. Singleton, Miss K. Stoddart, Mr. & Mrs. L. Vincent, Don Vincent, Ken Vincent, Mr. & Mrs. J.R. Wheeler, Mr. & Mrs. J. Whitmore, Mr. L. Wilkinson, Mr. I. Woodland, Mrs. E. Yoeman. (All above accommodated at Mt. Kitchener House). Accommodated elsewhere: Miss M. Henderson, Miss I. Laugher, Mr. & Mrs. O.A. Usher, Mrs. E. Wood. Total 72.

Our Itinerary was as follows:

Friday evening:	
Dinner	7.00p.m.
Spotlight Hike for Gliders	8.00p.m.
Supper	10.00p.m.
Saturday:	
Hike to Gilbert Gully	6.30a.m.
Breakfast	8.30a.m.
Full day car trip Cumberland Valley	9.30a.m.
Barbeque lunch Snow Junct.	1.00p.m.
Giant Trees and Falls	2.00p.m.
Dinner	6.00p.m.

Saturday (Cont'd.)	
Junior Quiz	7.15p.m.
Members Film Evening	7.45p.m.
Supper	10.00p.m.
Sunday:	
Hike through local bush	6.30a.m.
Breakfast	8.30a.m.
Official Group Photo.	9.30a.m.
Car trip to local bush & Steavenson's Falls	10.00a.m.
Lunch	12.30p.m.
Camp Break. Farewell.	2.00p.m.

Mt. Kitchener House is situated in a delightful bush setting at Marysville and the spacious verandah and lounge rooms gave views of the valley and distant mountains. This was our first occasion that full board was provided on our field outings and members enjoyed being free from household chores. It was regrettable that some members had to cancel through illness at the last moment but others on the waiting list stepped in. Another family group had the misfortune to strike serious car trouble en route and we were very relieved when they did eventually arrive late on the Saturday and were able to join in with the remainder of the program.

MARYSVILLE CAMPOUT
An Impression of the Local Flora
By Ted Errey, Belmont.

Although our Marysville week-end in October last provided a great deal of botanical interest, there was not the wide variety met with in previous years. This was only to be expected, for the Hall's Gap and Rocklands visits took us to the renowned wildflower areas of the Grampians, and on Wilson's Promontory in 1966 we explored from sea-level to mountain-top.

Marysville on the other hand, is in a rain forest region, and while gully vegetation there repeats some types found both in the Grampians and on the Promontory, the absence of open heath-lands means a dearth of the smaller floriferous plants so full of interest for the amateur botanist, though the white forms of the Common Heath was growing in patches of open forest as we approached Marysville.

The week-end, however, was by no means devoid of colour. Particularly along the roadsides and tracks, where the removal of taller plants allowed an abundance of sunlight to reach ground-level, the predominant yellows lit up the vegetation. Close to our headquarters at Mt. Kitchener House, two plants were conspicuous.

The Variable Sallow Wattle, with its long narrow phyllodes and catkins of blossom, was past its peak, but still retained sufficient colour to give clear indication of its full springtime beauty. The variable factor in this acacia is in the size of the phyllodes, which range in length from two to six inches and in width from about one tenth to almost half an inch.

More noticeable was the Hop Goodenia, a light plant two to three feet in height, which grew in numbers in the open. Among the timber it was taller and carried fewer flowers. These are typical of goodenias, looking somewhat like yellow violas, though the petals are looser than in other species. The Hop Goodenia is the only shrubby member of the genus. Only one of well over a hundred goodenias is found outside Australia.

Tetrathecas, or Black-eyed Susan, made bright patches of mauve pink among the taller vegetation. Both the common species, Tetratheca ciliata and T. ericifolia, were found, and a white-flowered specimen of the former was met on Sunday morning on the walk to Keppel's Lookout.

MARYSVILLE FLORA (Cont'd.)

Also in the neighbourhood was the Handsome Flat-pea, very attractive with its yellow and orange flowers. This is a taller plant than the more wide-spread species, the Common Flat-pea, so well known in bushland of the Geelong district. Both are weak-stemmed plants scrambling up through other bushes. The leathery leaves of the Handsome Flat-pea haven't the three sharp corner spines found on its smaller relative.

Another pod-bearer, rather insignificant by comparison with the flat-peas and acacias, was the smallest of the three Victorian hoveas. This is frequently only a single stem six inches to a foot in length trailing on the ground, the mauve pea-shaped flowers grouped in the leaf axils. The specific name, heterophylla, points out the variation in the leaf shape, grading from oval at the bottom to longer and narrow at the top of the stem.

The fresh green trifoliate leaves of the Golden-tip brightened the shrubbery in many places, and the loose racemes of golden flowers added splashes of colour rather different from the yellows of other legumes.

EUCALYPTS

The most plentiful eucalypt in the vicinity of our Guest House appeared to be the Narrow-leaf Peppermint. Perfume of the crushed leaves helps to identify these trees. The saplings and regrowth by the roadside carried the typical juvenile foliage, narrow, opposite and stalkless. This is very similar to that of the Manna Gum, but the flaky peppermint bark is distinct from the smooth covering of the gums. Different again is the grey and brown fibrous bark of the Messmates that grew in company with the peppermints, the Broad-leaf species of which was also seen.

The outstanding eucalypt of the Marysville district is, of course, the Mountain Ash, famous as the world's tallest hardwood. On the Saturday afternoon members visited the Valley of the Giants along the Cumberland where the tallest of Victoria's Mountain Ash are found. A number of these magnificent trees approach 300 feet in height, and would doubtless exceed that figure but for a fierce wind storm some years ago that

MARYSVILLE FLORA.(Cont'd.)

snapped the tops off most of the finest specimens.

Club photographers could be seen flat on their backs on the grass beside the mighty butts in order to include as much as possible of the trunks in their colourful slides.

These trees are allied to Peppermints in some respects, having similar buds and capsules, but the persistent bark covers only the lower part of the trunk to varying heights. Above is the smooth bark of the gum group, greenish in colour, and this peels in long ribbons in the usual gum-tree fashion.

MOUNTAIN GULLY TYPES

The Cumberland area is elevated rain forest and two other interesting trees thrive in the cool dampness of the gullies.

The Southern Sassafras carries nutmeg perfume in leaves and bark. The leaves, in opposite pairs, are toothed in varying degrees, shiny green above and whitish beneath. From the axils hang pairs of scented flowers, an inch across. In places the paths were plentifully dotted with the pale cream blossom.

Myrtle Beeches are well known in the Otways, where they have given the name to the township of Beech Forest. In the eastern half of the state they occur on the Promontory and in sections of the Yarra catchment area. The leaves form flat fan-shaped sprays and the young foliage is coloured like the tips of eucalypts and lillypillies.

Understandably there are many other cool gully trees and shrubs in the Marysville hill country, and a number of these attracted our attention during our stay. Possibly the best known would be three trees common to fern gullies throughout the south-eastern corner of Australia. They usually go by the names of Musk, Hazel and Blanket-leaf.

The first is a Daisy-bush or Olearia, the largest of about 140 species found in Australia. The toothed leaves are satiny white on the under surface and have a musky odour when crushed. In contrast to these smooth leaves, those of the Hazel Pomaderris are wrinkled above by the veining, while the under-surface is covered by a brown and white felting. The third species goes a stage further in its efforts to lessen transpiration, for the underside of the foliage has a quite woolly surface, hence the name Blanket-leaf.

These three trees grow to a height of twenty feet or so, and help to provide denser shade and wind protection for the tree ferns and other

MARYSVILLE FLORA (Cont'd.)

more tender plants below.

Less plentiful but very attractive was the Banyalla, a Pittosporum with much narrower leaves than the Sweet Pittosporum so often found in gardens and nature strips. The Banyalla has smaller flowers, yellow with shadings of purple and maroon, which explains its botanical name, Pittosporum bicolor. Those found at Marysville had the maroon colouring.

MINT BUSHES

Two species of Mint Bush grow in these shaded gullies, though neither was flowering at the time of our visit. One is very plainly a mint bush, for the foliage is even more strongly scented than that of the Oval-leaf species from New South Wales, which provides a mass of rich purple in our gardens in October. So strong is the perfume from the foliage of the Balm Mint Bush that it is known to timber workers as "Stinking Charlie", but this should not be taken to mean that it is obnoxious! In "Flowers and Plants of Victoria" Mr. Jim Willis describes it as "powerfully aromatic". It flowers about a month later than the well-known garden shrub, and it furnished a delightful picture in parts of the Otways when this club visited the Mt. Sabine area in November, 1967.

A month later still is the Victorian Christmas Bush, growing usually almost in the creek bed, and bearing lanceolate toothed leaves three to four inches long. In December and January the white blossom, tinged with lilac, provides a conspicuous blaze in the gullies, and the ground beneath is covered in white as the flowers fall.

FERNS

Time did not permit detailed study of the dense fern and other vegetation in the gully bottom. Soft tree ferns were there, of course, and Coral Fern was climbing among its neighbours in Gilbert's Gully, forming a tangled mass five or six feet high. Damp cool spots in more open areas provided ideal surroundings for the dainty Maidenhair Fern.

In such places were found the only two orchids seen in bloom, the Alpine Greenhood and the Common Bird Orchid. Sun Orchids

MARYSVILLE FLORA (Cont'd.)

were in bud, but not sufficiently developed to permit identification of species.

The Ivy-leaf violet also revelled in such conditions and numerous purple and white flowers peeped shyly from the grass.

MORE ACACIAS

Snow Junction, the site of our Saturday barbecue, provided us with a golden background comprised mainly of Silver Wattles, whose dark trunks with varied amounts of silvery moulting, rose tall and straight by the roadside.

It was there that we found a wattle that was new to us all. We thought first of Golden Wattle, till we saw that the phyllodes were curved, with the main vein well off centre, being much closer to the outer edge of the blade than the inner edge. Reference to Mr. Fred Rogers' "Field Guide to Victorian Wattles" led to the conclusion that it was Acacia obliquinervia. No common name is listed, so we assumed that the species is not plentiful.

CREEPERS

A spot of purple among roadside vegetation caught the attention of a sharp-eyed junior. This was the fruit of the Purple Apple-berry, which follows the yellow-green tubular flower on this very attractive creeper. The Clematis was also in bloom in many parts of the forest, at times covering stumps or bushes with its starry cream flowers. Here and there the rich blue of the Love-creeper, conspicuous only when flowering, brightened the bracken fern and other low growth around which it twined.

So fascinating was the scenery in general, with mountain vistas and tumbling waterfalls, not to mention the varied bird life, that I'm afraid too many plants were overlooked in this rather general account, but Steavenson's Falls themselves, rushing down their rocky way, brought under our notice the Mountain Correa, the tallest of the genus. Growing up amongst its crowding neighbours to eight or ten feet as it was, the plant was somewhat spindly in form, and the greenish yellow cylindrical flowers were therefore scattered, but standing on its own in a mountain stream bed it forms a shapely and interesting shrub.

Marysville district, we felt, like each of the other places that have entranced us on our October week-ends, offers quite enough for a further visit.

MARYSVILLE FLORA (Cont'd.)

Common and Botanical Names of Plants discussed
(In the same order as in the article)

Common Heath	Epacris impressa
Variable Sallow Wattle	Acacia mucronata
Hop Goodenia	Goodenia ovata
Black-eyed Susan	Tetratheca ciliata
" " "	" ericifolia
Handsome Flat-pea	Platylobium formosum
Common Flat-pea	" obtusangulum
Common Hovea	Hovea heterophylla
Golden-tip	Goodia lotifolia
Narrow-leaf Peppermint	Eucalyptus radiata
Manna Gum	" viminalis
Messmate	" obliqua
Broad-leaf Peppermint	" dives
Mountain Ash	" regnans
Southern Sassafras	Atherosperma moschatum
Myrtle Beech	Nothofagus cunninghamii
Musk, or Musk Daisy-bush	Olearia argophylla
Hazel	Pomaderris aspera
Blanket-leaf	Bedfordia salicina
Banyalla	Pittosporum bicolor
Sweet Pittosporum	" undulatum
Balm Mint Bush	Prostanthera melissifolia
Oval-leaf Mint Bush	" ovalifolia
Victorian Christmas Bush	" lasianthos
Soft Tree Fern	Dicksonia antarctica
Scrambling Coral Fern	Gleichenia microphylla
Maidenhair Fern	Adiantum aethiopicum
Alpine Greenhood	Pterostylis alpina
Common Bird Orchid	Chiloglottis gunnii
Sun Orchid	Thelymitra species
Ivy-leaf violet	Viola hederacea
Silver Wattle	Acacia dealbata
Wattle	" obliquinervia
Purple Apple-berry	Billardiera longiflora
Clematis	Clematis aristata
Love Creeper	Comesperma volubile
Mountain Correa	Correa lawrenciana

* * * * * * *

BIRDS SEEN AT MARYSVILLE

By Trevor Pescott, Belmont

The habitat around Marysville is different from any we have in the Geelong District, and apart from our rare trips to Healesville and Sherbrooke, this has been our first visit as a Club to the "big" forests.

Although superficially resembling the Otways, the forest around Marysville holds many birds not found there as residents or regular visitors - these include the Lyrebird, Pilot-bird, Whip-bird, Red-browed Tree-creeper, Brush Cuckoo and Black-backed Magpie.

Consequently these five birds, and particularly the last two, are the most interesting of the 51 we recorded during the weekend.

The full bird list, with appropriate notes on the individual species follows; scientific names have been adopted from the R.A.O.U. Checklist.

Nankeen Kestrel (Falco cenchroides) - Seen near Kitchener House on several occasions.

Boobook Owl (Ninox novae-seelandiae) - Heard calling at night.

Gang-gang Cockatoo (Callocephalon fimbriatum) - Heard and seen in various areas; possibly nesting in one of the large trees near Nicholls Lookout.

King Parrot (Aprosmictus scapularis) - Several flocks seen in Marysville township.

Crimson Rosella (Platycerus elegans) - Common around township and in the bush at several localities.

Kookaburra (Dacelo gigas) - Heard and seen regularly around Marysville where they have become quite tame, and in most bushland areas.

Sacred Kingfisher (Halycon sanctus) - Seen and heard near Kitchener House.

Pallid Cuckoo (Cuculus pallidus) - Heard and seen late on Sunday.

Brush Cuckoo (Cacomantus variolosus) - As it does not occur near Geelong, the sighting of this bird on Sunday created a great deal of interest.

Fan-tailed Cuckoo (Cacomantus pyrrhophanus) - Seen and heard calling near Gilbert Gully.

Golden-bronze Cuckoo (Chalcites plagosus) - Recorded from Snow Junction; the call is quite distinctive and is a useful field guide.

Superb Lyrebird (Menura novae-hollandiae) - Heard calling from several gullies.

BIRDS SEEN AT MARYSVILLE (Cont'd.)

Welcome Swallow (Hirundo neoxena) - Common around Marysville where it nests under verandahs in the main street.

Tree Martin (Hylochelidon nigricans) - Several seen; it frequents the large dead trees particularly near the cleared land.

Grey Fantail (Rhipidura fuliginosa) - Seen in most localities.

Flame Robin (Petroica phoenicea) - Several recorded; one seen near Kitchener House was coloured like a female but with a red throat, a plumage characteristic which is confusing ornithologists.

Rose Robin (Petroica rosea) - Seen at Snow Junction.

Pink Robin (Petroica rodinogaster) - Several seen; one was building a nest in low bush in the Cumberland Valley.

Yellow Robin (Eopsaltria australis) - Quite common in most localities.

Golden Whistler (Pachycephala pectoralis) - Heard and observed in several areas.

Olive Whistler (Pachycephala olivacea) - Seen in the bush above Snow Junction.

Mudlark (Grallina cyanoleuca) - Common around the town and in cleared land.

Eastern Shrike-tit (Falcunculus frontatus) - Two seen in the tree-tops near Gilbert Gully.

Eastern Whip-bird (Psophodes olivaecus) - Several pairs seen and heard in the gullies and in the bush on the lower slopes.

Grey Thrush (Colluricincla harmonica) - Quite common in most areas.

Blackbird (Turdus merula) - Seen around the township in good numbers, and in some bushland areas.

Striated Thornbill (Acanthiza lineata) - Several flocks seen feeding in the outer foliage of eucalypts.

Little Thornbill (Acanthiza nana) - Not as common as the previous species, but small groups seen.

Brown Thornbill (Acanthiza pusilla) - Common in the undergrowth and smaller trees.

White-browed Scrub-wren (Sericornis frontalis) - Common in the undergrowth, its presence usually announced by its harsh call.

Eastern Striated Pardalote (Pardalotus ornatus) - Seen in the trees near Gilbert Gully.

Spotted Pardalote (Pardalotus punctatus) - Seen in several places.

Pilot-bird (Pyenoptilus floccosus) - Two seen and many heard near Snow Junction and other areas.

BIRDS SEEN AT MARYSVILLE (Cont'd.)

Blue Wren (Malurus cyaneus) - Common in many areas, particularly in private gardens.

Orange-winged Sittella (Neositta chrysoptera) - One flock seen at Gilbert Gully.

White-throated Tree-creeper (Climacteris leucophaea) - Recorded at Snow Junction and other areas.

Red-browed Tree-creeper (Climacteris eyrthrops) - A pair seen at Gilbert Gully; in appearance, they are rather like the previous species. This bird does not occur around Geelong.

Silvereye (Zosterops lateralis) - Seen in several localities.

White-naped Honeyeater (Melithreptus lunatus) - At Gilbert Gully and in the township.

White-eared Honeyeater (Meliphaga leucotis) - Recorded in several areas; a pair were building an unusually shaped nest in a tree fern at Snow Junction.

Crescent Honeyeater (Phylidonyris pyrrhoptera) - Well distributed and quite plentiful, its call being most distinctive.

Yellow-faced Honeyeater (Meliphaga chrysops) - Another common and loquatious bird.

Eastern Spinebill (Acanthorynchus tenuirostris) - Favours the undergrowth, quite common.

Red Wattlebird (Anthochaera carunculata) - Quite plentiful particularly around the town.

House Sparrow (Passer domesticus) - Common in Marysville township.

Olive-backed Oriole (Oriolus sagittatus) - Seen and heard in the township.

Starling (Sturnus vulgaris) - Common, particularly around the town.

Satin Bower-bird (Ptilonorhynchus violaceus) - Several "green" birds seen in Marysville township.

Raven (Corvus coronoides) - Several seen in various localities.

Pied Currawong (Strepera graculina) - Seen and heard calling over the ranges.

Black-backed Magpie (Gymnorhina tibicen) - Several in Marysville township.

EXCURSION SECRETARY'S THANKS

My personal thanks to all members of our keen Committee for their assistance in organising this field outing which was held in perfect weather. My thanks also to those who provided transport to and from Marysville for members without cars, and to those who transported our equipment for the occasion. We now plan our 1969 field outing and we trust that it will be the success of previous outings.

"ASTRONOMICAL FIGURES"

By L. Elms, Belmont

When we use the term "Astronomical Figures", we usually imply numbers running into some thousands of millions. This is because the study of Astronomy has revealed that the vastness of the Universe, in which our world is a mere speck, is so great that the normal units of measurement we use are quite inadequate. For example the stars are so far distant that measurement in miles is futile, so the unit of a "light-year" is adopted. As light travels at 186,000 miles per second, the distance travelled by light in one year (i.e. one light-year), is about 6 billion, or six million-million miles. Even using these huge units of measurement, we are told that the nearest star to our earth, which is the "Pointer nearest to the Southern Cross", is four and one third light-years away.

As for some of the further stars, mention could be made of RIGEL, which is the bright star standing directly above the group of stars known to most of us as "The Saucepan". RIGEL is at the huge distance of 800 light-years away from us. This means that if you look at it tonight, the light which meets your eye actually left the star 800 years ago (in 1168 A.D.), and has been travelling towards our earth at 186,000 miles a second since then. Perhaps it is just as well for us that RIGEL is so far away. We know from the recent heat wave how hot our sun can make things here on earth. Well RIGEL has a luminosity 40,000 times greater than the sun, so lets hope it keeps its distance.

Although one might conclude that such astronomical figures could not be exceeded, such is not the case, and in common objects of Natural History, seen by us every day, we encounter even greater numbers than these. For example, how many grains of sand would you estimate there were in a cupful? Well multiply that by the number of cupfulls on a mile of beach, and multiply again by the number of miles of beach we have near us, and the total figure is not astronomical but infinite.

Or we might consider birds feathers. A leading scientist has explained that from the shaft of a feather the barbs branch off to the sides, and these in turn have barbules and barbicles branching off from them. He estimates that a crane's wing

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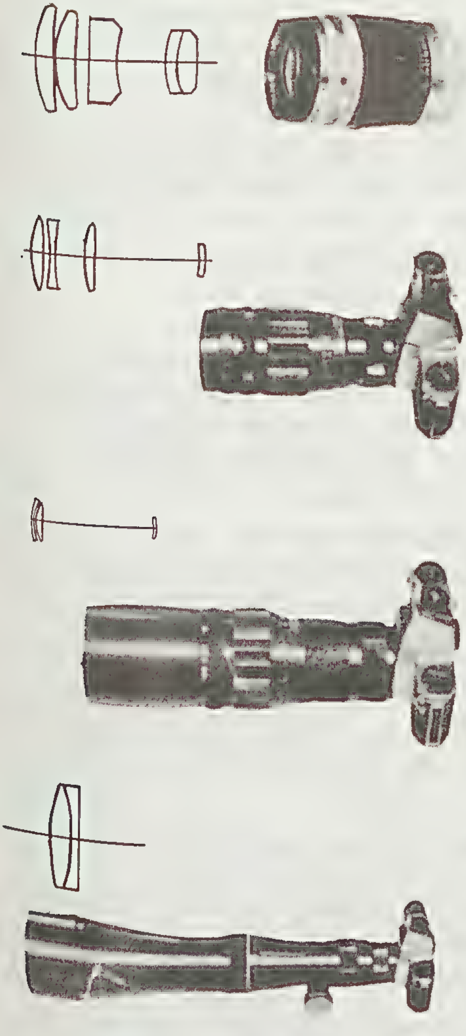

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ASTRONOMICAL FIGURES (Cont'd.)

feather would probably have some 10 million definite structures on it. If we therefore contemplate the number of feathers on a bird, the number of birds in a large flock, and the number of such flocks in ten square miles, the number of individual parts of feathers involved is again beyond our conception. It has been estimated that our flocks of Ibis may comprise some 240,000 birds but Matthew Flinders calimed that the number of mutton birds he encountered in Bass Strait was over 100,000,000 birds!

When we think of the number of eggs laid by some insects, we think of grasshopper plagues, where it is estimated that possibly some 400 million eggs per acre are hatched out. A colony of Ibis could devour these in one day. In a termite nest the queen termite lays eggs every few seconds, and probably lays about 30,000 in one day, and something like 100 million in her lifetime. Some fish are known to lay over one million eggs, which are left floating in the water.

Aphids have about the fastest rate of multiplication, and under favourable conditions one female may produce live young from 12 to 15 at a time. As these young are capable of reproducing in a fortnight, it has been estimated that the progeny of one female aphid might amount to 3-1/2 trillion by the next season. If these were placed in line, head to tail, they would form a column about 7,800,00 miles long, which would reach 1,000 times around the earth. Thank goodness they don't all survive!

Bacteria also multiply very rapidly, and if one cell were to divide one an hour, it would be possible to produce some 281,500 million bacteria in a period of two days, but fortunately lack of food and the accumulation of waste products prevent this rapid growth, and the newly produced cells die off.

So when you next hear the term "Astronomical Figures", don't be concerned, because here on earth Nature has provided us with actual cases of far greater figures. All the same, although Botany, Ornithology, Zoology and Entomology etc. are very interesting avenues of study, it is most interesting also to get out of the groove now and then, and reap the rewards of a brief study of such matters as Geology and Astronomy.

BIRD THOUGHTS FROM ABROAD
By Rolf Baldwin, Corio

It is a known function of advancing years that they make policemen look like boys in uniforms and bottles to be reduced in size; I am familiar with both these phenomena and think not of them. Now, however, a third has joined them which does worry me very much. The birds seem to be less numerous than they were in my young manhood. At least such was the impression gained on a recent journey through parts of East Gippsland - far enough away to be "abroad" for a Geelong man - which strengthened ideas formed in the last decade or so in the Grampians, the Mallee, the North-east and the Daylesford - Castlemaine - Maldon country.

First, in a well-remembered stretch between Stratford and Briagolong there were none of the noisy miners and eastern rosellas which used to enliven the way. This is strange, for the road is lined by ranks of big red gums, with a fair amount of undergrowth, while beyond there are park-like grazing lands, making a habitat very favourable to these two attractive species. Further on matters were worse. All along Freestone Creek, from Culloden for the next twenty miles towards Cobannah, there was scarcely a bird to be heard or seen. This was understandable, since it is only a couple of years ago that a devastating fire converted all of that avian paradise into a blackened wilderness that is only slowly regaining a fraction of its greenery. All gone are the creekside thickets where thousands of varied birds made merry and the heathy slopes that were haunts of all sorts of honeyeaters. Even five years ago this was a place where one could confidently take the stranger to show him gang gang cockatoos, king parrots, satin bower birds, whip birds, golden-tufted honeyeaters and all the other less spectacular species that inhabit such country.

On the Freestone, at least, a cause could be pinned to the gloom, but in other places this was not so. What of McKillop's Bridge, for instance? In that strange, remote place, where the lofty spurs and ridges, with kurrajongs and the exotic-looking Murray pines thickly sprinkled among the familiar eucalypts, look down on the mighty Snowy, there does not seem to have been a major bushfire in years. Along the Snowy and the homelier, tumbling Deddick there are grassy flats in plenty, thick scrubs and timbered slopes, which should support a numerous avian population. Yet in all of a calm, sunny evening and a sparkling Spring morning scarce a song or call was heard and the only birds actually seen were a couple of immature blue wrens. How can one account for that?

BIRD THOUGHTS FROM ABROAD (Cont'd.)

And what would one have to say about the Bairnsdale district? One camp, on the Boggy Creek near Bullumwaal, was in the bush of our youth. Against the background music of the rushing water rang the "Egypt" of the white-eared honeyeater, the haunting, ringing whistle of the shrike-thrush, the bell notes of the currawong, the laugh of the kookaburra, the harshness of cockatoos and the "beetroot" of crimson rosellas like a pennant of sound among the upper branches of the tall, slim manna gums. The innumerable busy little sounds of the small fry in the lower scrubs ran through all as a sort of theme song. Yet at another halt, less than forty miles away, on a calm evening and a bright morning, there was scarce a sound. The scene was a sandy ridge in the banksia scrubs, with plenty of eucalypts and an abundance of heath and bracken, the very place, seemingly, for a bird-watcher's delight. But what happened? A passing sulphur-crested cockatoo gave a disdainful squawk from on high, a white-eared honeyeater was heard, two tree-creepers passed swiftly by - and beyond that there was nothing. What a disappointment! And in Spring!

Only here and there, apart from the Boggy Creek interlude, were there memorable compensations. Once in the twilight as we

McKillops Bridge, Upper Snowy River.

Photo by R. Baldwin.

BIRD THOUGHTS FROM ABROAD (Cont'd.)

turned back from Mount Wills, defeated by snow and a desperate grade, we saw a magnificent male lyrebird run across the road only a few yards from us. He was far more impressive in his very wildness, under a lowering sky, in the sombre, dripping forest, than are the comparatively tame birds of Sherbrooke. On another occasion, the late afternoon being again dark and drizzling a hen lyrebird was seen in ungainly flight from the downhill edge of a sidling road to the upper bank perhaps ten feet above. This seemed remarkable compared with their usual downhill volplaning efforts or the clumsy fluttering which takes them up a tree. Most picturesque of all were the eagles. As we stood by the roadside on a bend looking down into the vast, sun-filled, thousand foot chasm of the Little River Gorge, a great wedge-tailed eagle sailed out into the void from the trees far below us, followed in a moment by another. It is difficult to put into words the excitement and elation that the watcher feels as he looks down, able to observe the graceful, finger-like movements of the wing feathers and the darting glances of the head, as these noble birds slowly soar in great circles, till at last they are far above him in the open sky.

Last of all came an observation and a problem. During a pause at quaint old Port Albert, with its ancient buildings and its memories of Macmillan, there were pied oyster-catchers and anonymous waders far out on the mud flats. Closer at hand were numerous silver gulls. They are so handsome, active and bold that they are always interesting to watch, but they are so familiar that the scrutiny is likely to be idle. So it was on this occasion and it was some time before we actually noted that one of them was drinking from a pool of fresh water. This is something that the present writer, in much watching of these birds, has never noticed them doing before. And so these random notes end with some questions. Do silver gulls drink regularly? If they are tipplers, is it salt or fresh water that they favour? Do the truly maritime birds, such as albatrosses, feel thirst and, if they do, how do they satisfy it?

* * * * *

A BIRD'S ANT ACID DIET

By C.J. Gibson, Belmont.

Do birds eat ants? Some, at least, most certainly do. And what's more interesting is that they are introduced to such dietary delicacies - or is it, medicinal necessities, for I'm not sure which as yet - at a very early age in life.

The evidence of my own eyes confirmed by those of my family provide proof of such facts. The facts being - one warm sunny afternoon (November 10 to be precise) we were travelling towards Armidale (N.S.W.) and at about 20 miles east noticed several birds fluttering just above the ground. Investigation revealed a male and female hooded robin hovering several inches above an ants nest. The ants nest was about 5 feet in diameter and swarming was in progress - many winged females were about the surface of the nest. The robins would hover for a few seconds and then without alighting pick up one of the large winged females and immediately fly with it to a near by fence where two young were being fed. The young obviously enjoyed the diet but I did not observe either adult eat one though they could well have done so for our observations were short.

The two adults were busily engaged in this task and must have caught many ants for their young if they had continued for long.

A little further down the road we saw two grey thrushes enjoying a similar diet - they had no young and were themselves consuming the ants as fast as they could.

I wonder whether these winged females at this time of season contain formic acid as some ants do or something else that particularly pleases these birds. I'm quite certain that the ordinary wingless workers or males were immune from such attack although in numbers they would have far exceeded the females.

I had not seen nor even heard of birds actually eating ants previously - I wonder how many others had.

* * * * *

At Random

SWIFTS SEEK WATER ON VERY HOT DAY: by Rev. Father Eames, Broadmeadows.

Wednesday January 22nd 1969, was a day when the mercury climbed to near the century mark. I was visiting Blackwood and spent some time observing birds in the region of "Shaw's Lake" and all at once a flock of some 150 Spine-tailed Swifts circled overhead. The lake was surrounded with very tall trees and imagine my surprise when odd birds broke away from the main flock and dipped to within inches of the ground. Eight of these birds flew down to the lakes surface and touched water, making quite a splash in doing so and one bird in particular hit the water with such force that it was temporarily stunned, dropping to the edge of the bank but soon recovered and flew off to join the main flock.

One may now ask the question, did the swifts seek relief from the heat by touching water, were they having a drink or were they only seeking insects close to the water's surface and in doing so touched water? In all my previous swift observations I had never experienced anything like this.

BIRD NOTES: by Jack Wheeler, Belmont.

Gannets on Wedgelight: For three seasons in succession, a few gannet pairs have chosen to breed on Wedgelight, a pile light situated off Queenscliff in Port Phillip Bay and at the entrance to West Channel. This 1968/69 season, the number of nests increased to thirteen and ten chicks were successfully reared. All chicks were banded with C.S.I.R.O. metal bands and for the first time, this season, the opposite leg is being banded with a blue plastic band. It is proposed to use a different colour each year. The colour for 1969/70 season will be red.

Blue-winged Parrots Breeding: On January 19th 1969, when visiting a patch of bushland near Aireys Inlet with the Bird Observers Club, I noticed several blue-winged parrots along the roadside. They repeatedly

AT RANDOM (Cont'd.)

flew back to the same area. Amongst the group were immature birds seeking food from parent birds. By this it is apparent that they had bred in the area. Several suitable nesting hollows were noted in the area.

A STITCH IN TIME SAVES NEST: by Jack Wheeler, Belmont.

Visiting Aireys Inlet on January 19th with the Bird Observers Club several nests were found. One in particular, right on the roadside was an immaculate nest of a pair of White-naped Honeyeaters made of fine stringy bark fibre and bound together with spiders webs.

The nest contained two very small young but it was noticed to be hanging precariously in such a manner that the young were in danger of falling out. Two volunteers, Fred James and Ron Lavery armed themselves with some very fine string, a needle, and with the aid of a stool to stand on, repaired the nest by stitching it to leaves and stems, and restored it to an even and safe keel. No sooner than Fred and Ron had left the nest, the parents were back feeding their babies as if nothing had happened.

VALUABLE NEW BOOK: by Trevor Pescott, Belmont.

Arriving too late for a complete review in this issue, but assured of one in the April issue of "Geelong Naturalist", is a book written by Natural History Medalist Mr. J. Ros Garnet; published by the Commonwealth Serum Laboratories and priced at 95 cents, it is titled "Venomous Australian Animals Dangerous to Man".

Featuring prominantly in the book is our cover subject, the Ringed Octopus, and animal which has received an enormous amount of publicity in our local daily press recently.

QUOTE FROM ANON:

The law doth punish man or woman
That steals the goose from off the common,
But lets the greater felon loose,
That steals the common from the goose.

JUNIOR PAGES

In this issue of our magazine is a report of our trip to Marysville by several of our senior Club members.

This story by Rosemary Grueber of Corio gives a junior member's view.

"While holidaying at Marysville we were walking along a quiet bush track when I found a large black snail with a red mantle. It is called a Mountain Land Snail. They are found in the Otway Ranges as well as Marysville. We went on a spotlight hunt for gliders the evening before and were lucky enough to see one. It was called Leadbeater and got its name from the man who first found the species.

Hunting for Lyrebirds we chanced to come upon two pairs of Whip Birds. They are blackish green with a touch of white and a black crest. Tiny Striated Thornbills darted in and out of the tall green umbrella-like tree ferns that grew beside the icy Cumberland River. As we were walking along a sandy track we came to an old rotten log shading a hollow that could well have been a wombat's home; but, on poking about with a stick we found that there was no-one at home.

During the afternoon we went for a peaceful walk down to the Cumberland Falls. Bird calls were frequent as we stopped to look at the low branches of the Sassafras plant. This plant has a small cream flower which grows on the back of its leaves. The trilling calls of the fantail cuckoo lingered in the still night air as we wandered around the beautiful gardens of Mt. Kitchener House.

Early the next morning we set out on a bush walk through the forest. Flame robins perched on the low branches of the tall Peppermint trees, flew away at our approach. A Brush cuckoo was observed in the thick foliage of the topmost branches of the eucalyptus gum. Whip birds could be heard through the thick undergrowth of the bush.

A Rose robin's nest was found in the cosy nook of two branches. Later on our trip to Stevenson's Falls, we came upon a male Golden whistler in dark grey plumage with a brilliant gold waist coat. We saw many

JUNIOR PAGES (Cont'd.)

birds. These are just a few of them: Striated Thornbill, Brush Cuckoo, Bronze Cuckoo, Flame Robin, Rose Robin, Yellow Robin, Whip Birds, Tree Creepers, Pied Currawong, Honeyeaters, Pardalotes, Thrushes and Magpies.

The Falls tumbled down the slippery, jagged rocks into the swirling river below. It was a breathtaking sight. But I am sad to say that the time had come for us to think of departing for home."

* * * * *

Belinda MacDonald of Mannerim made a very good bird observation; she writes:

"I am in Grade Five at Mannerim state school was going for a walk we saw a very pretty bird it was blue and black wings and a red yellow chest. We looked in the bird book and it was a dollar bird we have never seen one before. When we went to see again it was gone."

The Dollar-bird is indeed a rareity in the Geelong district; this summer, more than usual have come down from the northern part of Australia to Victoria, and a few have even come so far south as to reach Geelong.

These birds are not to be confused with the Indian Myna, another bird which has large white spots in the wings.

The spots in the Dollar-birds wings look rather like huge silver dollars once used in America before paper money became widely accepted. The Myna's white spots are very similar. The Myna does not look very much like a Dollar-bird apart from its wing spots, but is a brown bird with yellow beak and eye. Mynas are very common around Melbourne, and are becoming more plentiful around Geelong than they were a few years ago.

* * * * *

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Mr. O. Andrews, 18 Margaret Street, North Geelong. 3215.
(Phone: 7.2759)
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Published by

THE GEELONG FIELD NATURALISTS CLUB

Geelong Victoria

The G.F.N.C. meets on the first Tuesday in the month, at
8 p.m. in the McPhillimy Hall. St. Georges Church,
Latrobe Terrace, Geelong

Visitors Welcome

All papers submitted for publication in this journal should
be sent to the Hon. Editor.

Vol. 6 No. 1 May 1969 Price 25c

GEELONG NATURALIST

Journal of the Geelong Field Naturalists Club

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BROWN FLYCATCHER

Hon. Editor: Trevor Pescott

Registered at G.P.O. Melbourne for transmission by post as a periodical

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

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Subscription Rates are:
(Due on 1st April)

	Per Annum.
Adult Membership	$2.00
Joint Membership	$3.00
Junior Membership	50¢
Subscription to Magazine	$1.00

COVER PHOTOGRAPH:

Jacky Winter (Brown Flycatcher) at nest.

by C. Tingate.

GEELONG NATURALIST

Vol.6. No.1. May 1969.

EDITORIAL

It has been decided to bring "Geelong Naturalist" to you one month later than previously, in the hope that more up-to-date editions can be made; the reasons behind the decision are quite obvious when an examination is made of previous issues.

This issue is dated May, and by moving back one month, we can include any information from the April annual meeting, most notably the names of the newly-elected Committee; in an April issue I would have had to use the names of last years Committee, hoping there would be no changes.

By printing in November, we can include a report of the October campout, whilst it is still fresh in our minds.

And February instead of January, will overcome delays caused by a build up of work at the Printers office caused by the holidays in December and January.

It takes about four weeks to produce each issue, for the material has to be sorted, edited where necessary, plates made, and masters types, all before it is passed to the Printer himself to set, print, sort and assemble.

Change of addresses: Please advise Mr. O. Andrews of any changes of address, so that his work in preparing the magazines for posting can be easier; and please ensure that all post codes are correctly and clearly marked, for the Post Office require our envelopes (and there are nearly 400 for each issue) be sorted into post code order.

TREVOR PESCOTT,
Hon. Editor.

COMMENTS ON
BIRD NOTES FROM "THE GEELONG NATURALIST" PUBLISHED BETWEEN 1902 AND 1913

By Trevor Pescott

> Editor's note: The following notes were sent to Sir Charles F. Belcher in December 1966; his reply forms the next article on Page 7 , and should be read in conjunction with this article.

Late in 1965, I was loaned a bound set of "The Geelong Naturalist" incorporating the volumes First Series Vol.5 January 1902 to Second Series Vol.5 June 1913. This was not a complete set of the journal which was originally named "The Wombat", for the first issues were printed before the turn of the century, and the last nearly thirty years later.

However, the set I used covered the period of greatest activity of the Geelong Field Naturalist Club, and consequently much of the material printed then can be used to form a basis on which later observations can be built. It is needless to say that the very few references quoted below are but a minute section of many extensive papers and lectures.

I could not help but note how similar in many ways, particularly in the type of material published, these first two series were to the current "Geelong Naturalist". There was published then naturalist impressions of district places (even as far afield as Siberia and Sumoa) as well as articles and news of local observations.

The following are several observations of particular note, appended to which are comments relevant to the original statements.

Volume 5 No.3 July 1902
"Mr. W. Shaw has the following birds amongst others in his collection Satin Bowerbird - Steiglitz and Freshwater Creek.
Apostle (Struthidea cincrea)
Leatherhead (Philemon corniculatus) - from Steiglitz.
Greenleek Parrokeet (Polytelis barrabandi) - from the Brisbane Ranges."

The late Mr. W. Shaw was one of the original members of the first G.F.N.C.; he was an active collector and taxidermist, and a competant naturalist who worked to a large extent in the Brisbane

BIRD NOTES FROM "THE GEELONG NATURALIST" (Cont'd.)

Ranges area. However, the five birds listed are of particular interest to Geelong ornithologists because of their rareity or apparent absence from our district.

The Satin Bowerbird once ranged over much of our district and was particularly common in the Anglesea area and beyond. It is now no longer found closer than the Otway recesses and it no longer occurs in the Steiglitz region. Its passion for orchard-grown fruit made it unpopular and it was (and in some places still is) shot whenever possible.

Unfortunately, no details are available about the Apostle bird in Shaws collection; it is a bird of the inland, and should not be subject to seasonal migrations as are many inland species. There is, however, one interesting possible tie-up - Campbell in his book on Birds of Australia records the Mallee-fowl as a possible nesting species in the Brisbane Ranges. Could there have been a "tongue" of mallee-type birds intruding into the Ranges from further north and west? Another alternative is that the bird was collected in its normal habitat and the label with its data was lost; this does not however seem likely.

Leatherhead is another name for Noisy Friar-bird, one of the honey-eater family; Steiglitz is well south of its normal range which is Eastern Australia as far as the Murray River.

The Superb Parrot, or Greenleek Parrakeet, is an inland bird which would not generally occur here; however it is a strong flier and could no doubt arrive here by the same fly-path as the Friar-bird. It is of interest that every few years, reports are received - generally unconfirmed - that the Superb Parrot has been seen. My own observations are limited to a bird very similar to a Superb seen at Anakie in 1955; the throat colouring, however, was inconsistant with the usual coloring and it was therefore assumed that the bird was an escapee from an aviary.

It is interesting to note that none of the latter three (Apostlebird, Friar-bird or Superb Parrot) are listed in C.F. Belcher's book on Geelong birds.

Volume 5 No.4 December 1902

"The beautiful Blood Honeyeater (Myzomela sanguineolata) came down from its home in the tropical scrubs........ A specimen shot at Queenscliff by Mr. Batchelder was exhibited on September 5th. ......"

BIRD NOTES FROM "THE GEELONG NATURALIST" (Cont'd.)

"Another significant alteration to the (Game) Act concerns imported birds. Formerly all birds not indigenous to Australia, except Sparrows and Indian Minahs, were protected throughout the year. For the future only the English Thrush and Skylark and the Java Dove, are to enjoy this immunity."

With regard to the Scarlet (or Blood) Honeyeater, this is one of the very few records of the bird for this part of Victoria; I know of no other records for Geelong. The bird is a tiny honeyeater, a magnificent bird in color and shape, and one which could hardly be mistaken for any other, even if a specimen was not taken.

That the introduced species were recognised as pests so early after their establishment can only reflect the extremely poor judgement of the various aclimatisors who spent so much time in bringing us Blackbirds, Starlings and others. What a pity their time, money and energy was not spent in preserving our native fauna! (Much of the introduction of foreign birds was done in the early 1860's).

Second Series Volume 1 No.4 December 1904

"Satin Bowerbird (Ptilonorhynchus violacens). A small party of Satin Bowerbirds have built a bower in a pine tree over my kitchen at Bambra (October 10th 1892)...... As there were no black ones amongst them, I concluded that most of the birds were females or young males. The bower, which had a passage right through it, was composed of a lot of broken pine branches, laid across other limbs of the tree and built close to the trunk." (J.F. Mulder)

This report was also published in the book of C.F. Belcher, and his comment was: "The instance is the only one I know of a bower being built in a tree; the nest is always in a tree, but it is a small structure not in the least like the bower."

Iredale, in his book "Birds of Pardise and Bowerbirds" describes the bower as being built on the ground, and makes no mention of bowers built in trees. Nor have I seen any other reference to tree bowers.

The complete statement, made by such a competant naturalist as Mulder, is puzzling, and one wonders if there was any point overlooked which may have thrown more light on it. The fact that it was again quoted (some ten years later) in Charles Belcher's book seems to impress the accuracy of the original observation.

BIRD NOTES FROM "THE GEELONG NATURALIST" (Cont'd.)

Second Series Volume 5 No.2 July 1912

"The Goldfinch .... was unknown here (Eastern Park) till about 1886. The Ground-finch did not establish itself until 1890, and the Blackbird, Thrush and Starling came even later still." (C.F. Belcher)

This is quite a valuable reference to the introduced birds and interesting to compare with the next paragraph written only one year later (June 1913). The bird called "Ground-finch" would, I believe, be the Greenfinch and this is probably a typographical error rather than an alternative name.

Second Series Volume 5 No.3 June 1913

An article by C.F. Belcher - "Notes on Birds of the Torquay and Anglesea District" and refers to an expedition through the bushland in these areas in October 1912."

"Black-cheeked Falcon - Only met with at Bulls Well. Here the birds bred in the seacliff in 1904, and probably do so still. Psephotus c. chrysogaster. Orange-bellied Parrot - Single birds twice near Anglesea, flying high. If this is what the locals call "grass parrot", a nest is reported as having been cut out of a gum tree near Jan Juc a season or two back." (C. Evans)

"Introduced species as spreading amazingly. The Sparrow is not seen away from farms, but the Goldfinch penetrates the recesses of the forest and breeds in numbers with the Greenfinch and Blackbird in the scrub along the coast near Pt. Roadknight. Blackbirds nest with eggs found along Scrubby Creek a couple of miles into the heart of the bush. The Starling is ubiquitous in partly-cleared country. Skylarks were seen as far south as Torquay. It is now practically too late to check the advance of the imported birds, the greater number of which are, or will speedily become, pests; our unique and beautiful native Australian birds on the other hand are threatened with extinction as the strangers encroach more and more upon their food supply."

It would be just as true to apply that remark about the Falcon nesting today as it was in 1912; the Peregrine (Black-cheeked) Falcons still use the cliff at Anglesea to nest even after sixty two years since first found there. How many generations of falcons have used that cliff we can only guess, but it is to be fervently hoped the birds will hunt along the oceans edge as long as there are cliffs to hold their nests.

Regarding the Parrot, we do not have in any numbers the Orange-bellieds

BIRD NOTES FROM "THE GEELONG NATURALIST" (Cont'd.)

in this district now; our commonest Neophema (Psephotus) species is the Blue-winged which nest throughout the Otways. According to Jarman in a recent "Bird Watcher", the Orange-bellied (or breasted) Parrot is one of our rarest birds, with very little known of its breeding habits. It is frequently confused with the other Neophema parrots, particularly the Blue-winged which shares its habitat. Recent records of the Orange-breasted parrot around Geelong, and quoted by Jarman, refer mainly to coastal areas and include Werribee and Mud Island.

The problem of Neophemas around Geelong is a very vexing one for Belcher in his book records the Orange-breasted and the Elegant (Blue-banded Grass Parrakeet)and writes of the latter species - "I feel a little diffident about recording this as a local species on the strength of my own observations; there was, however, in the nineties, a Parrakeet of the genus Euphema (Neophema) which was not uncommon on the plains between the You Yangs and the sea where I often saw it, which I believe to have been this species, as it was certainly not the Orange-bellied Parrakeet."

The answer, I believe, comes in the naming of the species, as the current scientific names of the birds were adopted in the Checklist in 1926; Belcher's nomenclature was adopted from that used by Mr. Gregory Mathews prior to the Checklist publication. Belcher certainly had two species of parrot, and I think if the specimens taken were re-examined in the light of the reclassification of species about 1926 and since, he would name them Neophema chrysostoma, the Blue-winged as the Anglesea bird, and Neophema chrysogaster, the Orange-breasted as the bird on the margins of Corio Bay east of the You Yangs. How I would like to see the specimens in those early collections of Shaw, Mulder and others now, for much early material must have been lost forever!

Again, we have reference to introduced birds; it is interesting to note that before 1890, Blackbirds were not known to Eastern Park, yet by 1912, just twenty years later, they were breeding in the near-Otways.

Acknowledgement

I wish to thank Mr. W. Renton of Newtown for his generous loan of the magnificent volumes from which these bird notes were quoted.

ADDITIONAL BIRD NOTES
from Charles F. Belcher, Sth. Africa.

(The preceeding article was sent to Sir Charles Belcher in Kokstad, South Africa, and in December 1966, he wrote the following letter in reply; he comments about the birds mentioned, and his remarks about the Brisbane Ranges are of particular interest to all who have read his wonderful book "The Birds of the District of Geelong, Australia". ....Hon. Editor.)

"I was pleased to receive your letter (not dated and I'm afraid the envelope which may have carried a legible date was destroyed before I noticed the absence) however it reached me yesterday the 12th December. It was interesting reading over notes made so long ago. But I'm afraid that now in my 91st year memory is so faulty that I can be of no assistance any longer in clearing up identification.

Leatherhead. I cannot have had Shaws 1902 note before me when I was doing the book in London in 1913 or should certainly have incorporated this species in it,By the way, is it too late to get the word Stieglitz spelt right and not Steiglitz. The pronunciation of Stiglitz is near enough though it should be STEEGLITZ which better represents the German family name STIEGLITZ. My own family has been closely connected by several intermarriages into the VON STIEGLITZ family for the best part of 150 years and I know it always hurts them to see it misspelt. STEIGLITZ would be pronounced STYGLITZ in German if there were any such word which there isn't. Incidentally, the name has an ornithological significance - Stieglitz is the German for goldfinch. The present prominent member of the family in Australia is Mr. Karl v. Stieglitz of Evandale Tasmania, a historian.

Brisbane Ranges. I never visited these ranges and don't think I ever considered whether I should include it in my area.

Apostle-bird. I have always thought there could well be a "tongue" of dry-country birdway from Northern Victoria to a bit west of Geelong. All I ever saw of an Apostle-bird was an egg of the species which a boy two years senior to myself gave me when I was thirteen (Trevor Cunningham) who was a boyhood hero to me and lived in a two storey house near the Myers Street State School. His father was Manager of the (National?) Bank. But altho' Trevor took this egg himself, I am sure he told me he got it in the Coleraine district and not near Geelong. I agree that Shaw would not mix up bird labels. I never had

ADDITIONAL BIRD NOTES (Cont'd.)

any note of the Greenleek. Your Anakie bird is to my mind more likely to have been a case of unusual colouring than aviary escape.

Scarlet Honeyeater. I distinctly remember seeing that 1902 skin, shown at a meeting.(I wrote those last words before seeking and finding confirmation in my book.)

Bower Bird. My own belief was that Mulder recorded what was a rare, unique indeed, occurrence. The birds were it seems very tame and may have varied their wild habits.

"Groundfinch". Undoubtedly a missed typographical error for Greenfinch. I would accept my date 1890, but had I been asked I should have put it a year at least earlier that I found a nest with young in a pinus at the very corner of Beach Road and Garden Street, just in the angle of Merchiston Hall garden. I would say from memory (not to be relied on) that the bird was quite common in 1890. (when I was 14)

Falco peregrins. I cannot forbear to add a word or two. A man who became the dearest friend I ever had was in 1904 a lad of 18 and a frequent Sunday companion on pushbike trips to Anglesea and that part generally. He was William John Adie; born in McKillop Street on 31/10/86 and died at the head of his group (neurologists) in London on 17/3/1935. He tried his luck in England on my advice in 1906, though I felt his going bitterly. He had left school (Links) at 12 and passed his matric. at 18 or so from Howe's Auctioneers office (Mr. H. giving him time off). Well, it was a day in October 1904, and I had just found my first Tawny-crowned H.E. nest with eggs near the Bulls Well, when we crossed over to the beach and saw the pair of Falcons soaring and settling. Adie's son, Ian, my godson, is a world authority on the Chinese Language, and my son William, an Engineer by profession now, is Bill Adie's namesake and godson. So you will see it is not alone an ornithological interest that those cliffs have for me, but a memory of the finest man I ever knew, albeit he was little more than a boy then. Please excuse this, but my thoughts have run away with me.

Orange-bellied neophema. All I can say at this long distance in time is that the name I gave for the species I shot specimens of, is taken from Mathews as you say, and that the bird I saw and obtained are the bird, whatever it has since become, that G.M.M.named

ADDITIONAL BIRD NOTES (Cont'd.)

Neonamodes chrysogaster; and it was a different bird from the plains bird whatever that may have been (Avalon, You Yangs etc.).

Well, I seem to have come to the end of your typed notes. - If I could see any reason for my not having compared my neophema skins with Mathew's descriptions I would give effect to that admitted possibility - I haven't the least idea of what became of the skins of the birds I shot of that genus. Don't think I sent them to Mathews, though I may have done, as I sent him skins of the Prion that is named after myself which originated in the same period of my life (1909 - 1913). The idea of the book was conceived on a Sunday on the upper-Barwon with Purnell and I think George Broome (the latter still living) in September or October 1912.

It has been pleasant to dip into these memories again on this Sunday morning in the sleepy capital of East Griqualand, with alien avifauna darting about in the hard sunshine of South Africa. I think S.A. is much the best place in the world for a reasonable man to live; and yet when I transplant myself mentally to Australia I seem to go all soft-like!

Again, thank you for writing and I am only sorry I couldn't be of more help. At least I have tried."

* * * * * *

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* * * * * *

MT. WELLINGTON N58°E

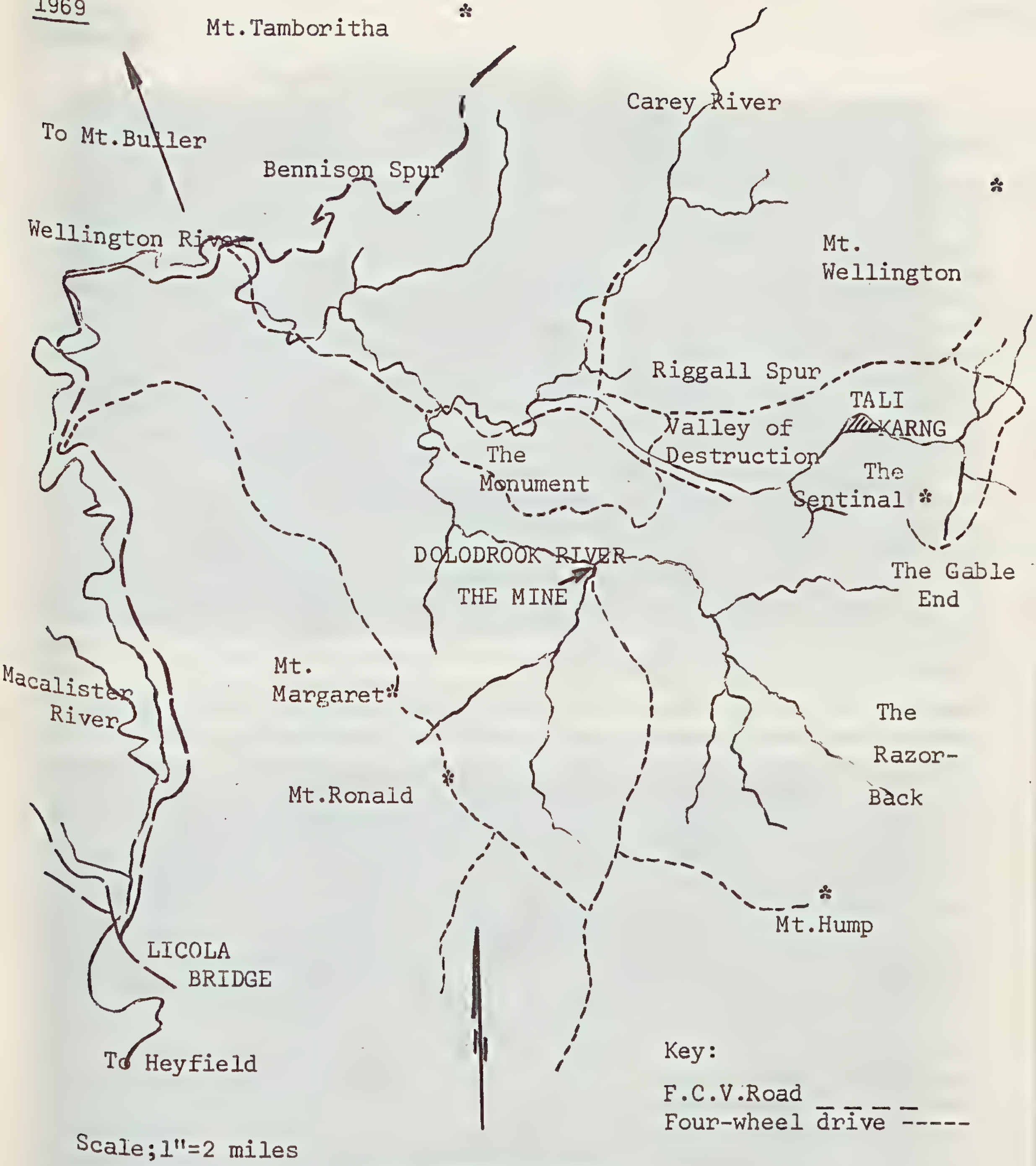
By A.G. Davey.

The valley echoed with the roar of the explosion and fragments of broken rock rained down on the clearing. As the dust cleared I emerged from behind the compressor and went back to the work of sinking the test shaft. Laboriously, holes had to be drilled in the rock and the ore blasted out and shoveled into heaps. This shaft was down about twelve feet, and in the sun the heat was oppressive.

The scarred hillside overlooked a beautiful valley running through rugged dry ranges towards the blue distant valley of the Wellington River. The valley held a stream with a beautiful name - the Dolodrook River, but almost dry in this terrible summer. Nothing stirred in the noonday heat, and, dusty and hot, I knocked off and trudged down the hill from the red mounds of earth, the black and grey piles of ore, and the glaring white scars of the test shafts. I passed a couple of bulldozed waterholes and the diamond drilling plant, and walked into the shade of the timber and down the hill to the river. On the flat was the camp - a big, hot tin shed, the vehicles and the fuel dump. I went down to the river and washed the clinging dust in the ice cold water. Taking time to throw pebbles at a few inquisitive trout nosing out into the shallows, I went back into the hut and sank into a chair.

The two-way radio broke the silence as the midday Forests Commission call came over. This radio was the only communication with the outside world, and the shortest way in overland was a long gruelling four-wheel drive trek from the road. Rugged ranges rise all around the valley, and this small settlement is the only one for many miles. The news of the outside world was coming in on the radio - the latest newspaper at the camp is often a week and a half old. Yet this is Victoria.

Chromite, an oxide of chromium, has been known in the valley of the Delodrook below Mt. Wellington in north-east Victoria since the turn of the century. At first it was thought to be tin, but once identified it was of little significance. Then, a few years ago a small Victorian mining company got the rights to the mining leases, and managed to get a big Japanese company interested. The Victorian Mines Department supplied geological, geophysical and mineralogical information and mounted a diamond



THE CHROMITE MINE.

MT. WELLINGTON N58°E (Cont'd.)

drilling program to determine the extent of the deposit.

Outcrops of chromite occur in serpentine rock in two associated localities in the area. One small occurrence is on a ridge between the Wellington and Dolodrook Rivers known as "The Monument" a mile or so from the larger deposit above the Dolodrook crossing. This larger deposit just above the river by the Mt. Margaret track crossing is that being developed. The mine is ten miles as the crow flies from Licola, itself 26 miles north of Heyfield, in Gippsland. Just to the south-west is Mt. Margaret and on the east five miles away the Razorback runs north from the cliffs of Mt. Hump to the Gable End and The Sentinel. Beautiful Tarli Karng is just five miles from the mine. Mt. Wellington rises to the nor-north-east, flanked by numerous other peaks and substantial spurs. The valley of the Wellington River is itself a truly beautiful sight. The area is mainly composed of Ordovician and Silurian slates, shales and conglomerates. There are some areas of Devonian granitic and isolated patches of serpentines. The valley of the Wellington abounds with fossils and is world famous for its superb graptolites.

Despite the drought there were still some wildflowers out up on the plains, and numerous birds frequented the thickets along the river flats just near the camp. Emus are occasionally seen up here on the plains, but few people pass through to record their occurrence. In my time at the mine the only people I saw were Forest Commission men, a few hikers, and some stockmen. As a student I was working at the Chromite Mine to get experience for mining engineering and as such it was well worth it. I certainly didn't waste my spare time, however. I spent many hot afternoons following rough ridges and creekbeds among the mountains. I walked down towards Mt. Margaret, and along the ridge towards Mt. Hump. I spent many an hour wandering along the quiet river with its dark mysterious pools and colourful rock bars, as it cut its way deep into the range. Many mornings I spent wandering among the cliffs and gorges upstream from the camp, or climbing the Serpentine hills near "The Monument". With my camera and one of the camp dogs for company, I often climbed the long steep track to the ridge above the Wellington and watched the deep valley of its tributary the Carey River gather the evening mist. Looking down from the rocky tops with their yellow box and

ABOVE - The top of the track down into the mine. The clear patch down in the valley is the mine area itself. Mt. Hump and the Razorback are away on the horizon.
BELOW - Our camp on the flat by the Dolodrook River.

Photos by A.G. Davey.

MT. WELLINGTON N58°E (Cont'd.)

ironbark the valley is full of tall blackbutt and woolybutt where the timber cutters have yet to come.

One morning I got up just before four o'clock, and had climbed the track onto the ridge above the Wellington before five. Leaving the track I set off along the ridge, eastward, toward the Gable End five miles away. The "Gable" is 5208 feet and for two and a half hours it was a steady climb through scrub and broken rock. As I got above the dry ridge the timber got bigger and as I got closer to the cliffs of the Gable the going was progressively rougher. By eight o'clock I was getting pretty hot and the ridge still seemed to be going up and up. All around stood huge boulders and underfoot was loose rubble held together by scrub. Eventually I burst triumphantly out onto the top only to find that I had just reached the top of the last big knob of the ridge. I stared across, east, to the forbidding cliffs of the Gable, about half a mile away. Standing on a big boulder amongst the timber, the view at this height was good and the mine appeared to be miles back. The sun had just started to come out from the cloud that had been overhead since before dawn, and the ranges away to the west stretched sun-blotched into the hazy distance.

I pushed on and soon ran into difficulties. I chose a narrow slope up between the cliffs - the only opening to the top from the west side - and it proved to be a loose scree slope covered with particularly thick scrub. Pausing occasionally to look back at the view or to look at a tiny soak in the rocks I fought my way up for an hour. Eventually the scrub got thinner and I emerged into the snowgum on the flat top - for the Gable is flat on top with gentle approaches on the eastern sides and steep cliffs on the west. I sat down on a big rock and looked down on the sea of rugged ranges below. Away to the south I could see the plains of Gippsland around Heyfield and Briagolong. Mt. Baw Baw reared its head into the clearing cloud to my west, and to the north was a succession of big mountains, Mt. Wellington, Mt. Arbuckle, Mt. Kent, and the high plains.

With only one day at my disposal I had to keep moving, so I walked north along the flat top of the Gable to the Sentinel and could look down to Tarli Karng and "The Valley of Destruction". Then, dropping straight off towards the lake I spent several hours srambling and tripping down the scree slope toward it. I got to

MT. WELLINGTON N58°E (Cont'd.)

the valley just near the falls on Nigothoruk Creek above the lake, and after photographing the beautiful falls and rapids, climbed down to Tarli Karng. The lake, showing obvious signs of the severe drought was over twelve feet low, but otherwise just as beautiful as ever. It certainly is a jewel in the mountains.

I had my lunch in the sun on the shingle beach. The day had become a beautiful one, and there was no-one else about. Eventually I stirred myself into action and walked around the lake and climbed up the steep foot track to the jeep track on Riggal's Spur that runs down to the Wellington. The sun was getting low as I reached the bottom of the spur and walked down to the river. Then crossing the Wellington with its murmuring shingle bed, I climbed the steep ridge above the Dolodrook and walked down the track to the mine just as the sun was splashing the Gable with long shafts of orange. Coming down the track I crossed the Dolodrook and before I got to the camp the dogs came out to meet me. I took one last look at the Gable, dimming in the evening light, high to the east.

* * * * * * *

BLACK-COCKATOOS AND GRUBS

By Trevor Pescott, Belmont

There has recently been a large amount of work done to clear and widen the eastern end of the Thompson Track in the Otways, from Forrest east towards the landslide Lake Elizabeth; trees along the margins of the road have been bulldozed to one side, and the road formed with a grader.

The majority of these trees are Messmate, or a very similar Stringybark, for the bark is thick and typically fibrous; all of the trees have been infested with wood-boring grubs which attack the sapwood just below the bark.

Yellow-tailed Black Cockatoos have found these grubs in the felled trees, and each tree has had the bark shredded down to the wood, where the located grubs have been found and eaten.

* * * * * * *

"DOWN TO EARTH"

By Ellen M. McCulloch

Watching a mixed flock of birds feeding on the ground at Wyperfeld National Park in north-west Victoria I was surprised to see a beautifully bright male Rufous Whistler join the throng. As far as I could see, all birds seemed to be feeding on ants, which were plentiful amongst the litter of fallen branches and bark. Other birds in the area, all on the ground, were Jacky Winters, Striped Honeyeaters, White-rumped Miners, Willie Wagtails, Spiny-cheeked Honeyeaters and Hooded Robins, all species which were frequently seen feeding at ground level.

The unexpected sight of the Whistler feeding on the ground started me thinking - for all I knew many birds which are normally thought of as tree-feeding species come down to earth, if food is available there. I went through my notebooks and found several more examples, and I offer these notes in the hope that other people will check on similar experiences. What seems to me an unusual habit for birds in my area may of course be quite commonly seen in other areas, presumably being largely an adaption to the food available.

I have seen a concentration of White-plumed Honeyeaters feeding on the ground at Blackburn Lake - once again the only insects I saw were ants - and Red Wattle-birds and Little Wattle-birds sometimes hop about on my front lawn. Very strange was the sight of an Eastern Spinebill using the concrete path as a vantage point from which to spring up into a wavering haze of tiny midges - this it did for some considerable time. A flock of Brown Thornbills at Flowerdale bobbed about on the grass looking almost like a party of wrens, though the tails were not cocked as high. Mr. Franz Fehrer tells me that on several occasions he has seen Little Thornbills feeding on the ground at the You Yangs, under Acacias.

At a previous visit to Wyperfeld National Park, vast numbers of birds were feeding on caterpillars, which were then on the ground in plague proportions. Included were Black-faced Cuckoo-shrikes which I normally see only in trees, though there are records of them hovering at ground-level. Pallid Cuckoos also were there in numbers, and a Grey Butcher-bird collected beakfuls of the grubs and took them to a nest above.

"DOWN TO EARTH" (Cont'd.)

The famous English ornithologist Mr. Guy Mountfort has stated - "Life history studies demand patience, and continuity of action; random notes and snap judgements are dangerously misleading.", and when one reads his fascinating book on the elusive Hawfinch, which was the result of years of study, it seems presumptious to publish odd facts seen occasionally. On the other hand, we have so relatively little published on the feeding habits of Australian birds that all information is valuable.

Recently published records reveal that parrots eat insects and their larvae, and that Eastern Shrike-tits eat seeds. Blackbirds on my lawn eat wheat, Willie Wagtails search amongst rocks on the sea-shore, and Rock Pigeons find food on the beach.

Detailed life-studies may be beyond the scope of most of us, but records showing adaption by birds to suburban living are probably seen

Red Wattle-bird on ground

From drawing by Rex Davies.

"DOWN TO EARTH" (Cont'd.)

every day. e.g. Crimson Rosellas have been known to eat patent dog-biscuits, and clean off gristle from a dog's bone (Bird Observer Dec. 1965). I have seen an Eastern Spinebill pecking at a suet lump after suet scraps had been loosened by a Grey Shrike-thrush.

Many questions need to be answered - Do Kookaburras collect goldfish from garden-ponds, or do they just sit and look at them? What trees and shrubs (introduced and native) are visited by various birds - for fruit, berries, insects or nectar? Are Starlings a menace or of benefit in suburban areas, judging from food taken? How many species of honeyeaters in Australia have been attracted to nectar-feeders? How many other species? The list of questions is endless and varied.

Notes taken should be as detailed as possible, in the hope that one day they may fill in a gap in the life-history of some of our native birds. Remember that conservation measures can only be effective when based on accurate information.

Scientific names of birds mentioned -
Rufous Whistler - Pachycephala rufiventris
Jacky Winter - Microeca leucophaea
Striped Honeyeater - Plectorhyncha lanceolata
White-rumped Miner - Myzantha obscura
Willie Wagtail - Rhipidura leucophrys
Spiny-cheeked Honeyeater - Acanthagenys rufogularis
Hooded Robin - Petroica cucullata
White-plumed Honeyeater - Meliphaga penicillata
Red Wattle-bird - Anthochaera carunculata
Little Wattle-bird - Anthochaera chrysoptera
Eastern Spinebill - Acanthorhynchus tenuirostris
Brown Thornbill - Acanthiza pusilla
Little Thornbill - Acanthiza nana
Black-faced Cuckoo-shrike - Coracina novae-hollandiae
Pallid Cuckoo - Cuculus pallidus
Grey Butcher-bird - Cracticus torquatus
Hawfinch - Coccothraustes coccothraustes
Eastern Shrike-tit - Falcunculus frontatus
Blackbird - Turdus merula
Rock Pigeon - Columba livia

"DOWN TO EARTH" (Cont'd.)

Crimson Rosella - Platycercus elegans
Grey Shrike-thrush - Colluricincla harmonica
Kookaburra - Dacelo gigas
Starling - Sturnus vulgaris

* * * * * *

ORPHANED GANNETS

By Jack Wheeler

On the weekend of 24-26th January last we experienced gale force winds and it is thought that at this time four young gannets were blown off the high wooden platform of Wedge-Light off Queenscliff in Port Phillip Bay where a small nesting colony is now well established.

The birds which had been banded on 23rd December, were all found washed up 8 miles away at St. Leonards - 60465 was found dead, 60466 was found alive and delivered to Trevor Pescott and several days later returned to Wedge-Light by Jack Wheeler, 60468 had a broken wing and died next day, 60464 was found alive and later handed by the Fisheries & Wildlife to Mr & Mrs Smeelie of Portarlington to rear. They called the bird Albert and being only 55 days old, still had considerable amount of down about the head, breast and lower back. Mr Smeelie was a fisherman and able to keep Albert with a good supply of fish but there were days when Mr Smeelie was unable to put to sea and Mrs Smeelie purchased small fish from boys fishing along the pier, and also on occasions purchased bullocks hearts from the local butcher. On certain days when it was hot, Albert enjoyed getting under the garden hose and when all soaked, exercised his wings to some order. By mid-March, Albert was fully developed and attired in lovely mottled grey-white plumage. On March 19th he was reintroduced to the sea but each time he took off flew around to come back to the Smeelies. They didn't have the heart to leave Albert on the beach, so back home he went to his backyard life once more.

Albert was growing very restless and did much wing exercise. On 30th March, a second attempt was made to dispose of Albert, and depositing him at the waters edge on the beach at Portarlington, he went through a thorough wetting of sea water and then without much effort, took off and headed right out to sea to join up with others of his kind. The Smeelies are to be congratulated on a job well done.

* * * * * *

NADGEE REDISCOVERED

By Bert Keith

FATEFUL MEETING

It was quite by accident that I came upon a large group of members of the Caloola Club, a Sydney bushwalking group, on the Bogong High Plains nearly 20 years ago. We were going the same way, I was impressed with their methods, and I became a member, which for many years meant simply receiving their bulletins and envying their exploits in various parts of New South Wales.

But when, in 1959, the literature again mentioned Victoria, I immediately took steps to join the party. The intention this time was to conduct a large-scale nature survey in the Nadgee reserve, an area in the farthest south-east corner of N.S.W., meeting Victoria at Cape Howe. In order to take in a large quantity of supplies and materials for two or three camp centres, it was planned to go by launch from Mallacoota, Vic., and be landed on the beach at Nadgee Bay.

BEST-LAID SCHEMES

Simple enough! But, equally simply, a heavy nor'easterly sea, persisting for weeks, ruled out landings by dinghy. Even a seasick land-lubber could see that! We spent most of our time on Gabo Island, waiting in vain for a change of weather, pleasantly enough, but rather cramped, and disappointed.

Three years later an entry was made by land from the Wonboyne or northern end. Supplies this time were conveyed in rucksacks, plus a special delivery by Land Rover just when we were beginning to live off the land - none too affluently.

REALIZATION

So at last I saw this strip of country about which my friends had spoken so enthusiastically. It is not a large area, being about 30 miles from north to south and only five or six miles deep inland, thus comparable in size with Wilson's Promontory. There are three distinct environments: a spectacular rocky coastline with beaches dotted along it; vast and inspiring areas of heathland, a wealth of colour in the spring; and westward the ridges and creeks running down from 1500 feet or so, clothed with open forests of bloodwoods, stringybark, grey gum etc., the home of wallabies and the large forester kangaroo. The creeks

NADGEE REDISCOVERED (Cont'd.)

tend to be blocked at the coast by sand bars, forming lagoons, of which Salt Lake is the largest, ideal breeding grounds for water birds.

Our survey was made almost entirely within earshot of the surf. The leaders were specially anxious to identify the ground parrot, which was once thought to be extinct and is still quite rare. In a sweep by about 30 people spread across the moors, a few parrots were in fact sighted. Observations of many other species were listed, collated and returned to Sydney, and I did not hear much of the conclusions. It had been a pleasant walking holiday in good company and unspoilt country.

Any good trip is worth repeating at least once, and for years I cherished the idea of returning to Nadgee. Last January the dream came true when a party of boys and men from the Geelong College arranged to spend several days there. We were all experienced walkers and campers, and one of the boys was a skilled bird observer.

SURPRISE

When we reached the Merrika River after a long day's travel from Geelong, we were surprised to find the reserve under full-time management, entry being by permit and by quota. Fortunately our credentials were acceptable and we were soon on the best of terms with the Ranger. And so, as well as doing what we had planned, we were able to observe this attempt by the N.S.W. National Parks and Wildlife Service to preserve for ever a specimen of primitive Australian bush and coastland.

We read their documents. "You are expected to conduct yourself in a Nature Reserve as would be required of you in a Museum or an Art Gallery. It is not a place for games and sports. Your entry into the Reserve is considered to indicate an agreement by you to abide by the laws and regulations provided to protect the natural values..." There must be "substantial proof of bona fide interest and purpose in natural history and wilderness, and capacity to care for the bushlands." No unnecessary noise; no dogs, firearms etc. Camp, walk and light fires only as authorized.

NATURE TRAILS

Coldly awesome as this may sound, the College party found itself in no way cramped. It became clear that natural history groups are specially welcome. The permitted camp sites are beautifully grassed and surrounded by magnificent trees. The Ranger is working, as time

NADGEE REDISCOVERED (Cont'd.)

permits, to develop a network of nature trails. The coast, in addition to brilliantly coloured walks, and its own bird life, can provide the odd bream or parrot fish to eke out the iron rations.

Our walking tracks criss-crossed the area for about 80 miles. We went to Cape Howe and saw the wreck of an old freighter which ran right up on the rocks with her anchors stowed. (On the way, we carried eight-pound steel stakes to help the Ranger extend his trail in that direction.) At the Cape, the tall, pink granite tower of the Gabo Island lighthouse seemed an arm's length away.

Despite the dry conditions, there were a few orchids in the bush; also ticks and leaches. We listed our birds, including fifteen sightings of the ground parrot over a wide area. Our almost constant companions were the red-bellied black snakes and the Lyre birds, both beautiful, shy creatures, equally enjoying sanctuary in this antipodean other Eden.

THE CHOIR INVISIBLE

The final highlight was a long sweep into the mountains along the western border of the reserve on a perfect day, which yielded everchanging views of bush and coastline in two States, green, blue, gold and white. Inland, tier upon tier of forest ascended towards the Australian Alps. That day we saw more ground parrots and lunched to the superb and sustained accompaniment of a choir of lyre birds.

Nadgee, like the rest of south-eastern Australia, has been very dry. When on the move, we normally carried water for our midday meal. Soon after our departure the area became so dry that it was necessary to close it to visitors. Fire danger was high: in February a fire near Cann River in Victoria, if it had been turned by a strong sou'westerly, could have swept across the border to the N.S.W. coast.

TOO LITTLE, TOO LATE?

Can the Nadgee project succeed? The problem is to preserve it FOR posterity and at the same time to preserve it FROM posterity. Does access mean ruin? It seems necessary to admit that "virgin bush" is already a thing of the past, but this in itself is no final reason for despair, since damaged areas can be repopulated provided the damage does not go too far too often.

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NADGEE REDISCOVERED (Cont'd.)

One serious question is whether the area is large enough to withstand the onslaughts of the centuries to come. No part is out of sight of the perimeter, given sufficient altitude. The remotest gullies are less than 20 miles from the Prince's Highway, fishing grounds, and holiday resorts to north and south. Oil slicks pollute the beaches on the east and cattle wander in from south and west. A brilliant piece of interstate co-operation could be to link Nadgee to an extended form of the Mallacoota Inlet National Park in Victoria.

ACTION

The responsible authorities are making some gains, as witness the comparatively few serious fires in a potentially catastrophic year. There is stronger reason to fear the developer, the automobile, the motel and the shooter. The urgent need is to define sufficient typical areas, to manage them in such a way as to protect them, and yet to make them accessible under control.

This is not a new idea. It has been carried out already in the Kruger National Park in South Africa and in various parts of the United States.

But let us be smart about staking out our samples of primitive Australia for such protection. Resumption afterwards - too little, too late, at a high cost - is unsatisfactory, as the Geelong Field Naturalists have already discovered.

We of the Geelong College received thanks and praise for our report, which was sent on to Sydney, and were cordially invited to come again, a tempting thought.

Can there be any better method of furthering the aims of conservation than by the education of the younger generation?

BIRD LIST

The list which follows was compiled by Ian Baird, who emphasizes that it would have been considerably larger if the trip had been concerned solely with ornithology. Many species sighted were not positively identified and have therefore not been included.

Ground Parrot - Pezoporus wallicus
King Parrot - Aprosmictus scapularis
Crimson Rosella - Platycercus elegans

NADGEE REDISCOVERED (Cont'd.)

Yellow-tailed Black Cockatoo - Calyptorhynchus funereus
Spine-tailed Swift - Hirundapus caudacutus (Large flock)
Welcome Swallow - Hirundo neoxena
Fairy Martin - Hylochelidon ariel
Wonga Pigeon - Leucosarcia melanoleuca
Brush Bronzewing Pigeon - Phaps elegans
Yellow Robin - Eopsaltria australis
Scarlet Robin - Petroica multicolor
Superb Lyrebird - Menura superba
Rufous Fantail - Rhipidura rufifrons
Grey Fantail - Rhipidura fuliginosa
Leaden Flycatcher - Myiagra rubecula
Little Wattlebird - Anthaechaera chrysoptera
Eastern Spinebill - Acanthorhynchus tenuirostris
Tawny-crowned Honeyeater - Gliciphila melanops
Bearded Honeyeater - Meliornis novae-hollandiae
Eastern Shriketit - Falcunculus frontatus
Kookaburra - Dacelo gigas
Pallid Cuckoo - Cuculus pallidus
Fan-tailed Cuckoo - Cacomantis pyrrhophanus
Boobook Owl - Ninox boobook
Grey Shrike-thrush - Colluricincla harmonica
Southern Emu-wren - Stipiturus malachurus
Eastern whipbird - Psophodes olivaceus
Rufous Whistler - Pachycephala rufiventris
Golden Whistler - Pachycephala pectoralis
Black-faced Cuckoo-Shrike - Coracina novae hollandiae
White-breasted Sea Eagle - Haliaetus leucogaster
Dusky Woodswallow - Artamus cyanopterus
Red-browed Finch - Aegintha temporalis
Brown treecreeper - Climacteris picumnus
Grey Butcher Bird - Cracticus torquatus
Australian Pipit - Anthus australis
Grey-backed Silvereye - Zosterops halmaturina (nest and eggs)
Australian Pelican - Pelecanus conspicullatus
Australian Gannet - Sula serrator
Silver Gull - Larus novae hollandiae
Spur-winged Plover - Lobibyx novae-hollandiae
White-faced Heron - Notophoyx novae hollandiae
Black Swan - Cygnus atratus

NADGEE REDISCOVERED (Cont'd.)

Red-necked Avocet - Recurvivostra novae hollandiae
Hooded Dotterel - Charadrius cucullatus
Red-capped Dotterel - Charadrius alexandrinus
Black Duck -- Anas superciliosa
Pied Oystercatcher - Haemalopus ostralegus
Little Tern - Sterna albifrons
Crested Tern - Sterna bergii
Black Cormorant - Phalocrocorax carbo
Little Pied Cormorant - Phalocrocorax melanoleucos
White-eared Honeyeater - Meliphaga leucotis
Yellow-faced Honeyeater - Meliphaga chrysops
White-browed Scrub Wren - Sericornis frontalis
Red Wattle Bird - Anthochaera carunculata

Many beach washed Mutton birds
Also beach washed Fairy Penguin
A few dead Black Swans around Salt Lake and occasionally on beaches.
Quail species sighted.
Sandpiper species seen on Salt Lake. Also a solitary Snipe species.
Some King Parrots were in immature plumage.

* * * * *

NANKEEN NIGHT HERON ROOKERY ENLARGES

By Jack Wheeler

The Nankeen Night Herons of Queens Park have had housing problems and have had to increase their breeding rookery to other groups of Mediteranean 'stone pines', now six in all. Nesting this last season commenced early in September when six nests were then in use. Young were noted in the nests by mid-October and by early December at least 14 nests were in occupation. The extension of the rookery southwards to three more groups of nut pines was then evident and later increased the total nests to 22. However gale force winds and summer heat took their toll, especially that tragic fire day January 8th. The staff of Queens Park have counted over thirty dead young during the past few months.

However, some were reared and during my last visit there, three strong almost fully fledged young were noted in one tree of the new area. By remains under the nest tree, the young were being fed on elvers, small redfin and a small fish yet to be identified.

FORESTERS IN TRAINING

By Peter Fagg (Forester)

The Geelong Field Naturalists' Club intends to visit the Victorian School of Forestry early in 1969. This short introduction to the School may, therefore, be of interest.

Forestry is the protection, management, and use of one of our great natural resources. Forests produce timber, safeguard water catchements, protect and hold the soil, provide recreation for the people, and provide for wildlife habitation. The forester's job then, is of national importance.

The Forests Commission, Victoria, trains its own officers at this School, in Creswick, eleven miles north of Ballarat on the Daylesford road. The School was established in 1910 in the buildings of the former Creswick Hospital. It lies within 20 acres of grounds, some 11 acres of which are properly landscaped. Hundreds of different shrub and tree species, many being labelled, make for a delightfully green setting.

The School manages its own pine plantations and eucalypt forest (including a koala sanctuary); these total about 1800 acres. An up-to-date physics, chemistry, and forest research laboratory complex, opened in November 1968, is a recent, valuable addition to the School's training facilities.

The V.S.F. has a staff consisting of a principal, four resident lecurers, and several visiting lecturers.

Subjects studied are: First Year - Botany, Geology, Physics Chemistry.
Second Year - Soils, Statistics, Mensuration, Surveying, Management, Pathology, and others.
Third Year - Economics, Silviculture, Wood Technology, Fire Protection, Engineering, Entomology, and others.

Each year, approximately 10 boys are awarded the comprehensive scholarships for the 3-year course. Successful students are awarded the Associate Diploma of the School of Forestry, Creswick [A.Dip.For.(Cres.)]. Many graduates have attained important positions in forestry and the timber industry, not only in Victoria, but throughout Australia.

At Random

NOTES ON SWIFTS - Compiled by Trevor Pescott, Belmont.

There have been a number of interesting observations made on Swifts this year, and these have been listed below as they constitute some valuable records; these birds are currently under study by Melbourne ornithologists, and any further observations should be sent to Mr. K. Simpson, c/o National Museum, Melbourne 3000, or Mr. R. Wheeler, M.B.E., 59A Upton Road, Windsor 3181.

19/1/69 Otways (5 miles E. of Forrest) Two SPINE-TAILS flying low over tall timber, direction S.E. 3.30p.m. weather - fine, hot, calm. (Observer - Trevor Pescott)

26/1/69 Blackwood. About 6.00a.m., a flock of several hundred SPINE-TAILS were noted circling over the mountains, flying at a height of perhaps 1000 ft. They were calling with a twittering note very like a flock of Sittellas. The weather was calm and cool, and quite cloudless, although a wind sprang up about 8.00a.m., and the sky clouded over. None appeared on 27/1/69, although a watch was made from 5.00a.m. to 9.00a.m. (Observer - Trevor Pescott)

On the same day (26/1) FORK-TAILS were seen over Port Campbell. (Observer - J. & T. Wheeler)

11/2/69 Belmont. FORK-TAILS recorded. (Observers - J. & T. Wheeler)

3/3/69 Belmont. A large flock of several hundred FORK-TAILS was seen over Belmont, flying in a northerly direction; most were flying fairly low, and identification was made easy for whenever the birds banked after catching an insect, the forked tail was shown to advantage. (Observers - J. & T. Wheeler)

A similar flock was seen at the You Yangs (Observers - Mr & Mrs J. Hunt)

AT RANDOM (Cont'd.)

9/3/69 Gum Flat, Anglesea. A few birds (SPINE-TAILS) flew overhead at several hundred feet altitude, during the mid-afternoon (3.30 to 4.30p.m.). A winged bull ant which had lost its abdomen was found on the ground, possibly having been dropped by the birds. Weather was hot, clear and calm. (Observer - Trevor Pescott)

10/3/69 Cape Otway. A flock of FORK-TAILS and two flocks of SPINE-TAILS, each of up to 500 birds, were seen circling low around the cliffs and low vegetation, and amongst the stunted trees, at varying heights from 10 to 1000 feet above the observer. This was late afternoon; weather - fine, warm (70° to 75°), slight breeze, whispy cloud.

The birds were feeding, circling, and drifted towards Apollo Bay, following the coastline.

SPINE-TAILS were heard to make a twittering call.

FORK-TAILS held tail closed when they dived after an insect, slightly fanned the tail to show the deep, swallow-like fork in it as they levelled out, then folded the tail again as they returned to their original elevation. (Observer - Geoff Gayner)

10/3/69 Belmont. Throughout the day, large numbers of FORK-TAILS, TREE MARTINS and WELCOME SWALLOWS were feeding over the Barwon Valley and over Belmont immediately south. There was a light north wind which was apparently causing air currents to rise up the steep slope south of the valley, and it was on this up-draught that the birds were feeding. First seen about 11.00a.m., they remained throughout the day, feeding at altitudes from 50 feet to several thousand where they were visible only through binoculars. Weather was hot, cloud building up, light north wind. (Observer - Trevor Pescott)

FORK-TAILS were also observed on the east side of Belmont on this same day. (Observer - J. Wheeler)

11/3/69 West Geelong. SPINE-TAILS flying to the north west at 4.30 to 6.00p.m.; there were many birds. (Observer - Cliff Tingate).

Highton. Thousands of swifts flying north about 6.00p.m. (Observer - Mrs. Higgins)

Weather had been hot; there was a fierce electrical storm over Geelong about 7.30 to 8.00p.m.

AT RANDOM (Cont'd.)

12/3/69 Ocean Grove. At least 200 FORK-TAILS circled over the Nature Reserve for a period of more than two hours. (Observer - Jack Wheeler)

7/4/69 Otways (5 miles E. of Forrest) On the previous mornings (4th, 5th, 6th) and on the evenings of 5th and 6th, a few SPINE-TAILS were seen flying N.W. over Lake Elizabeth. This morning (7th) at 8.20a.m., about 20 birds appeared overhead, circling at about 500 feet altitude above our position (elev. 1500' A.S.L.) These birds were calling a twittering note, again so like sittellas that I looked into the trees first. They disappeared after about 1/4 hour, but I could not see which way they flew. Weather fine, mild, light W. winds. (Observer - Trevor Pescott)

9/4/69 Ballarat. Flocks of hundreds of FORK-TAILS were seen over the Ballarat High School; all birds were moving in a northerly direction. (Observer - Roger Thomas)

10/4/69 Western Beach, Geelong. One FORK-TAIL flying north along the beach, 10.00a.m. Weather hot, blustery, strong N.W. wind. (Observer - Trevor Pescott)

Later in the day, a large flock of FORK-TAILS was seen over Belmont, and over Breakwater - time 4.15p.m. These birds were flying very high, and fast in a northerly direction. The weather now changed, the wind swinging more southerly, and a cold front passed over Geelong. (Observers - Mrs. J. Wheeler, H.B. & Trevor Pescott)

About an hour later - time 5.15p.m. - many birds were seen flying past the vehicles on the Melbourne-Geelong road; these, too, were FORK-TAILS, and they were flying at less than 100 feet above the ground, moving very fast in a northerly direction, directly ahead of the cool front. They were not feeding, and appeared to be moving in pairs. (Observer - Geoff Gayner)

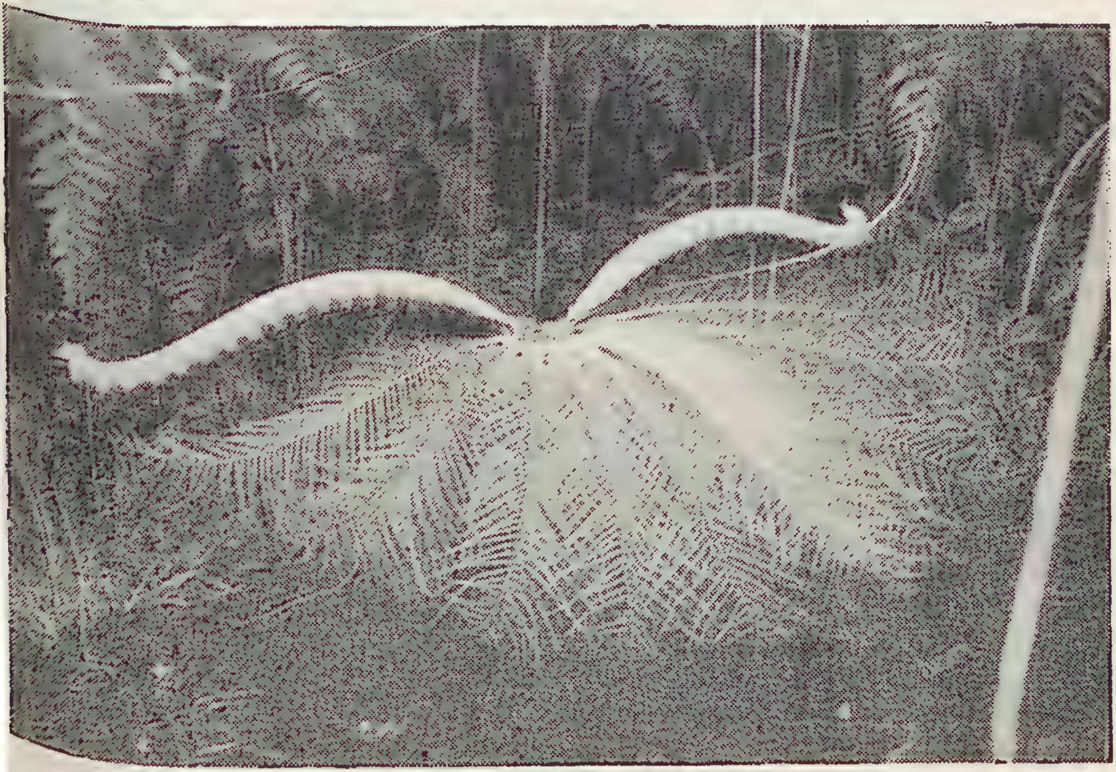
The following comments are from Jack & Trix Wheeler, Belmont.
Results of Swift observations throughout Australia each year, reveal that Spine-tailed swifts are sighted in the order of 8 to 12 to every sighting of Fork-tails. The B.O.C. records for the season 1966-7, Spine-tailed swifts 562 reports as to Fork-tails 47, whilst in 1967-8, the reports were 482 to 60 respectively. Geelong and district reports would follow a similar pattern, but this year ther were fewer Spine-tail reports than those of Fork-tails. Previous to this season, our reports of Fork-tails have only been made in th years 1954, 55,58,60,64 & 65. Of these the most spectacular was at Anglesea on 2/1/55 when we observed a flock of over 2,000 hawking insects low over the road in 95° heat, just prior to a cool change.

Junior Pages

THE SUPERB LYREBIRD

With the winter approaching, the Superb Lyrebird (Menura novae-hollandiae) will be preparing to nest, and to raise its one young in the large, domed nest built in a secluded part of the forest. In May and June, the male Lyrebird builds a mound amid a thicket of ferns, and here he dances and sings, courting his mate, and declaring his territory.

It is the female that builds the nest, incubates the egg, and rears the youngster, while her mate defends their territory of forest from



Adult male Superb Lyrebird in full display, Sherbrooke Forest.

JUNIOR PAGES (Cont'd.)

other Lyrebirds. The display is more than just a courtship dance - although this is one important reason for it - it is through the song that the male tells other Lyrebirds that this section of the forest is his, and any others which enter his territory will be attacked and driven off.

The male rarely, if ever, visits the nest, but his work is every bit as important as the females', for once the chick hatches, the father must keep other Lyrebirds out of his part of the forest; his mate is busy collecting the huge amount of food their young needs, and they can not afford to share the forest now, because the food supply must be retained.

By mid spring, the young bird has left the nest, and during the months that follow, he is taught by his mother to feed, to recognise danger, and to sing.

Summer is the hardest time of the year for Lyrebirds, for then food is scarce, and the ground becomes hard and dry. The long, beautiful tail of the male is moulted along with the other feathers during this time of the year, but by autumn, the Lyrebirds are again ready to start the year again.

The best place to see Lyrebirds is at Sherbrooke Forest, in the Dandenong Ranges beyond Melbourne; and a calm, dull morning is the best time.

Junior members, please note:

These last two pages are for you; they are set aside to give you space to publish your observations, letters or notes. Please write to the Honorary Editor whose address is shown opposite.

Do not forget the Junior Lectures, held before each monthly meeting of the Geelong Field Naturalists Club.

* * * * * *

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Hon. Editor:
Mr. T. Pescott, 4 Victoria Terrace, Belmont. 3216.
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Mr. G. Gayner, 95 Clarence Street, Geelong West. 3218.
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Mr. J. Whitmore, 13 Fairview Street, Belmont. 3216.
(Phone: 43.5316)
Mr. I. Woodland, 33 Grant Street, Newtown. 3220.

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Excursions Secretary:
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(Phone: 43.3441)

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(Phone: 7.9206)
Mr. O. Andrews, 18 Margaret Street, North Geelong. 3215.
(Phone: 7.2759)
Mrs. B. Quirk, 36 Fairview Avenue, Newtown. 3220.
(Phone: 21.1229)

Published by

THE GEELONG FIELD NATURALISTS CLUB

Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in the month, at
8 p.m. in the McPhillimy Hall, St. George's Church,
Latrobe Terrace, Geelong

Visitors Welcome

All papers submitted for publication in this journal should
be sent to the Hon. Editor

Ken Jenkin Print — Geelong

Vol. 6 No. 2 AUGUST, 1969 Price 25 cents

GEELONG NATURALIST

Journal of the Geelong Field Naturalists Club

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"Toadstools at Macedon"

Hon. Editor: Trevor Pescott

Registered at G.P.O. Melbourne for transmission by post as a periodical

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

MEMBERSHIP

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Subscription Rates are:
(Due on 1st April)

	Per Annum
Adult Membership	$2.00
Joint Membership	$3.00
Junior Membership	.50¢
Subscription to Magazine	$1.00

COVER PHOTOGRAPH:

Toadstools at Macedon

Photo. by Gordon McCarthy.

GEELONG NATURALIST

Vol.6. No.2. August, 1969.

EDITORIAL

As we were preparing this issue of Geelong Naturalist for the Printer, news came through of the State Government's decision to open a first stage in the development of the Little Desert.

Knowing the policy of our Minister for Lands, this was not entirely unexpected, although disappointment has been voiced by many who believe the entire Little Desert should be declared a National Park.

The only concession made by the Minister after a huge storm of protest is that advice of wildlife and conservation experts would be sought in the selection of the site for a National Park of 80,000 acres.

But on his own admission, and confirmed by his actions regarding the Lower Glenelg area, the Minister would rather accept the advice of "practical farmers" than of experts.

On the surface we are back where we started before the controversy began, without any material gain; the huge gain conservation has had is in publicity, for it has been shown that all groups of the general public can be roused to denounce development projects thought not to be in this State's best interests.

As was stated recently, land declared a National Park is irretrievably lost to future development, as surely as bulldozed land is to preservation.

So even if the development of the Little Desert is held to 48,000 acres, it will take a tremendous effort to have much more than 80,000 acres declared a Park. The respite given us by the decision to open initially only a first stage must be used by conservationists to renew demands for a larger permanent reservation, and by naturalists to carry out ecological surveys of the Little Desert.

TREVOR PESCOTT,
Hon. Editor.

MT. MACEDON CAMPOUT, MAY 1969

JACK WHEELER

For the second year in succession, a Club weekend was undertaken to Mt. Macedon with our headquarters at "The Bungalow" under the management of Mr. & Mrs. H. & M. Schwarz and sons Mark and Michael, all enthusiastic members of this Club. Situated in Devonshire Lane under the shadow of Mt. Macedon, the locality is a delightful one, being the centre of large gardens noted for their beautiful exotic trees and coinciding with the time of our visit, the 'autumn tints' provided a scene of great beauty. Apart from the exotic trees and shrubs, the natural bush scene of towering eucalypts adds to the attractiveness of Mt. Macedon.

Our visit this year was three weeks earlier than the corresponding visit of 1968, when it was too cold for it to snow and the earths surface became encrusted in ice. For this visit we had very favourable weather with a maximum of sunshine and moderate autumn temperatures.

Forty three members and friends were accommodated at The Bungalow and a very homely atmosphere prevailed; the amenities (recreation) room was ever popular with the younger folk, and the billiard and table tennis tables, and also the piano, were in constant use during periods of relaxation.

Our itinerary was as follows:
Friday evening: Spotlight hike. Films and slides by Owen Andrews and Arthur Chapman. Supper.
Saturday - Morning: Pre-breakfast hike. After breakfast - hike to Camel's Hump (Leaders Mr. Scott and Mr. McCarthy). Those not hiking were taken up to 'The Cross' and later met the hikers at the Hump.
Afternoon: Car trip to Hanging Rock. The return trip was made via Macedon with a call at the State Nursery to see the 'fly agaric' fungi.
Evening: Junior Quiz: Winners - Girls - Lynor Barr. Boys - Glen McCarthy and Dallas Barr. Then followed a members film evening. Guests Mr. & Mrs. Marco Spek also showed slides of Switzerland and Mt. Macedon. Supper.
Sunday: Pre-breakfast hike. After breakfast - official photograph. Visit to local gardens, Forest Glade and Ardrudah.
Afternoon: Visit to Civil Defence Headquarters - Leader Mr. Scott. Return 3.30p.m. special afternoon tea - presentation

MT. MACEDON CAMPOUT (Cont'd.)

to Mr. & Mrs. Schwarz and family by Mr. Goding and supported by Mr. Wheeler.

My personal thanks to members for their co-operation in carrying out roster duties, setting tables, waiting on tables and washing up - also to those who so unselfishly provided transport to others. In all a very delightful weekend.

Personnel list:
Mr. O. Andrews, Miss M. Arthur, Mr. & Mrs. S. Barr, Dallas Barr, Lynor Barr, Meralyn Barr, Mrs. A. Buzaid, Mrs. B. Campbell, Phillip Campbell, Mr. A. Chapman, Mr. & Mrs. E.G. Errey, Robyn Errey, Mr. & Mrs. A. Goding, Mr. A. Grant, Mr. & Mrs. F. Grueber, Helen Grueber, Rosemary Grueber, Miss Hickman, Mr. & Mrs. G. McCarthy, Glen McCarthy, Jill McCarthy, Miss E. Poole, Miss F. Poole, Mrs. B. Quirk, Mrs. L. Rowe, Mrs. F. Singleton, Miss M. Slavin, Miss K. Stoddart, Miss Walker, Mr. & Mrs. J.R. Wheeler, Mr. & Mrs. J. Whitmore, Mr. L. Wilkinson, Mr. & Mrs. R. Wood, Mr. I. Woodland, Mrs. E. Yeoman.

Visitors: Miss I. Laugher, Mr. & Mrs. H. Dunn, Peter Dunn, Jeffrey Dunn, Lindsay Dunn, Mr. & Mrs. Bell, Mr. & Mrs. Crookshank and family, Mr. & Mrs. Marco Spek.

* * * * *

BONESEED

BY JACK WHEELER

The recent announcement by the Victorian Government, that South African Bone-seed had been declared a noxious weed was received very favourably by naturalists. The credit must be taken by the several societies, clubs and the Committee of Management of the You Yangs Forest Park for their continued efforts in bringing details of the rapid spread of this curse in many parts of this State, under the notice of proper authorities.

It will probably take several years before the full impact of eradication of this pest is fully effective, as much as cost is involved, and much more research will have to be undertaken on control.

In the meantime I would very much appreciate the continued efforts of those interested to continue pulling at every opportunity. Such methods have been successful in controlling the spread of bone-seed in certain areas of the You Yangs.

MT. MACEDON CAMPOUT - SOME GENERAL NOTES CHIEFLY BOTANICAL

TED ERREY

Mount Macedon was climbed and named by Major Thomas Mitchell during his explorations across Australia Felix in 1836, though Hume and Hovell twelve years earlier had given it the name of Mt. Wentworth.

In his account of this section of the journey Mitchell wrote:-

> I ascended without having been obliged to quit my horse's back, and I found that the summit was very spacious being covered toward the south with the tee-fern and musk plant growing in great profusion. .... The summit was full of wambat holes, (his spelling) and, unlike the side of the mountain by which I had ascended, was covered with the dead trunks of enormous trees in all stages of decay.

Mitchell had hoped for a sighting of Port Phillip from the top of the mountain in order to establish his position more accurately, but he found this was impossible because of the dense vegetation. Not till he was well down the side again did the bay come into clear view. Because Philip was king of Macedon in the fourth century B.C., the mountain received its present name owing to a peculiar association of ideas on Mitchell's part, though he wrote, "Geboor is the native name of this hill and is a much better one."

Settlement of the area began in 1837, and in the gold-rush days of the fifties the Black Forest between Gisborne and Woodend was the lurking place of bushrangers interested in the coaches plying from Bendigo and Melbourne.

THE GEOLOGICAL ASPECT

The mount itself was formed in Devonian times approximately 300 million years ago, and when one remembers that modern man is reckoned to have developed only 20,000 to 30,000 years back, these formations must be considered really ancient. In those times land plants in the form of ferns, early conifers and club mosses had not long evolved, and the first amphibians were leaving the water and making tentative excursions on dry land.

Probably neither plants nor animals had reached that area when the light-coloured Devonian lava was forced out along fissures in the unstabilized crust of the earth to form the long ridge known as Mount Macedon. The hills of the Marysville district where we

MT. MACEDON - SOME GENERAL NOTES (Cont'd.)

enjoyed our week-end last October were formed in much the same way, and the rhyolite in evidence at our original camp-out at Rocklands is a related rock.

These light-coloured lavas were generally viscous and did not flow over the countryside as the more fluid basalts did. Instead, they tended to pile up into steep-sided mounds known as mamelons, and this explains the peculiar formation of the Camel's Hump on top of Mount Macedon and of the Hanging Rock a few miles to the north. The grey lava of these two features is known as solvsbergite, presumably deriving the name from Solvsberg in southern Sweden.

At the top of Hanging Rock there is much evidence of erosion, numbers of the boulders being deeply scoured out by the action of wind and swirling grit. These formations have been "case-hardened" by chemical action. Soluble mineral salts within the rock were, over the centuries, brought to the surface by capillary action. There the water evaporated, and the minerals left behind cemented the grains of the outer layers of the boulders. Once this casing is breached by the elements, the comparatively softer inner material erodes more rapidly, hence the cave-forms that attracted so much notice.

In contrast to the violent upheavals and volcanic activities of those far-off times, the outpourings of lava that formed the great basalt plains of western Victoria took place but yesterday, approaching within ten thousand years of the present.

By that period, plant and animal life had achieved the stage of development that greeted the first European visitors to this continent, and the aborigines were firmly established.

AUTUMN

As our week-end at Mount Macedon was spent at the end of autumn, the native flora was in its least interesting phase. In fact, almost the only colour was provided by the deciduous trees introduced from the northern hemisphere, the dying leaves of which produced in their last hours a range of sunset hues as if in some degree to compensate in advance for the stark bareness through the drear winter months ahead.

Autumn being the time of fruitfulness, it was to be expected that native berries would be in evidence. The Prickly Currant Bush was found bearing quite a crop of its small red fruit. These are sweet to the taste, but being only an eighth of an inch in diameter they are more attractive to

MT. MACEDON - SOME GENERAL NOTES (Cont'd.)

the birds than to humans. This plant is a member of the coprosma genus, so it is related to the New Zealand looking-glass bush, frequently used as a hedge plant in Victoria. Another native, the Rough Coprosma, is also found in the Macedon area. The berries of this shrub are larger, up to a third of an inch in size. Coprosmas bear unisexual flowers - that is, the male pollen-bearing stamens, and the female stigma and ovary are on separate flowers. (She-oaks sometimes go a step further and segregate the sexes on different trees.)

During the Saturday morning walk to the Camel's Hump, the Tasman Flax-lily was found with a display of rich blue berries rather like the fruit of the Purple Apple-berry met with at Marysville last October. The Flax-lillies are tussocky plants with leaves resembling those of the Saw-sedges, though not quite so harsh. They do well as garden subjects, sending up tough thin flower-stalks in the summer to hold aloft the starry blue flowers. The plants increase by means of creeping underground stems, coming up often several feet from the parent plant.

Large clumps of Thatch Saw-sedge grew among the Eucalypts on open hillsides. The long dark brown seed-plumes, on stems five or six feet in length, are often used in large floral arrangements, though the collecting of these can result in deep skin cuts from the very sharp leaf edges.

THE EUCALYPTS

Close to The Bungalow many fine specimens of Messmate grew by the roadside, some being the headquarters, at least temporarily, of koalas, judging by the evidence on the ground beneath. These trees, some with huge trunks, were well over a hundred feet high. To the east of the township we found a slim Messmate that had been uprooted apparently by a recent storm. Though its diameter at stump height was no more than two feet, the tree measured 120 feet in length. On its way to earth it had snapped off a neighbour of similar size ten feet from the ground.

In the same locality Manna Gums grew to perfection. They were in the process of shedding their bark, great brown streamers hung in profusion, and the newly peeled trunks and branches gleamed frosty white in the morning sun. On strip a foot in width had come adrift above the first huge branches some sixty or seventy feet up. The

MT. MACEDON - SOME GENERAL NOTES (Cont'd.)

lower end was still attached to the trunk where the rough bark ended about 25 feet from the ground.

Contrasting sharply with these were the rather stunted specimens growing on top of Hanging Rock. This exposed position, and the dryness of the soil due to the different drainage conditions, naturally inhibited such vigorous growth as was found at lower levels.

A similar variation could be seen among the Snow Gums on Mount Macedon itself. On the windswept Camel's Hump the trees could not be compared with the admirable stand to be found in the vicinity of the Cross. Both groups, however, showed the same attractive bark colouration.

One particular Manna Gum on Hanging Rock drew my attention. Though it was a spreading tree twenty feet or so in height, all the foliage was of juvenile form, narrow and opposite in habit. Whether the leaves had been stripped by insect infestation and all growth was new I could not decide.

SMALLER PLANTS

Near the top of Hanging Rock, where the steep climb up the southern face levels off, the path meanders across a damp grassy area. Here Bluebells showed bright spots of colour among the tall herbage.

Seepage in roadside drains provided ideal habitats for Prunella, or Self-heal, a low spreading plant that delights in wet places. The purple-blue flowers in squarish clusters are nearly always present. The upper petals form tiny hoods over the flowers which peep out between the browny-green calyces.

Plants in high rainfall districts such as this grow luxuriantly, and, especially where creepers are present, very dense tangles are frequently met. One example found on a back road had begun as a Christmas Bush. Over this was growing such a confusion of Clematis, Wiregrass and Appleberry that little of the original plant was visible. The Musk plant referred to by Major Mitchell is the tallest of our Olearias or Daisy-bushes. It is still known best as Musk, because of the leaf perfume, and it is still very common about the Mount. The lovely satin sheen on the underside of the foliage is revealed by every breeze.

OLD MAN'S BEARD

Clematis carried a profuse supply of seeds, some of which were collected for use elsewhere. Seedlings were plentiful; their distinctive foliage is purple underneath and has a silvery strip along the mid-rib on the

MT. MACEDON - SOME GENERAL NOTES (Cont'd.)

upper surface. The long white feathery plumes on the seeds have earned them the name of Old Man's Beard.

The same name is used for a very different plant, a lichen often found on dead twigs and branches. This was seen quite frequently during the week-end. Though not as fluffy as the Clematis seed, the Lichen is well named. Lichen, of course, is not a simple plant, but a combination of a fungus and an alga growing together for their mutual benefit. The alga could most likely do quite well on its own; the fungus could not, without the food-manufacturing facilities of the alga's chlorophyll.

GROUND COVER

Promise of spring flowers was seen in the developing buds of Varnish Wattle and Hazel Pomaderris. Among the smaller shrubs, Hop Goodenia, which we found so colourful at Marysville last October, and Rough Bush Pea, were to be seen.

There were ground cover plants too, though they were not as plentiful as in more open country. Violets, Forest Pennywort and Kidney-weed were common. The last of these is often mistaken for the first, but the leaves of Kidney-weed are noticeably indented at the stem, while those of Violets are not. Kidney-weed flowers are inconspicuous but the plant soon forms a thick mat in a damp shaded position.

Orchids did not appear to be plentiful during our brief visit to the district. The Gnat Orchid and the Blunt Tongue Greenhood were the only species found in flower. As Mosquito Orchids are usually found in association with the Gnats, a more careful search would almost certainly have found them both.

Another interesting shrub was the Tough Rice-flower, perhaps better known as the Bootlace Bush because its tough pliant bark has served many bushmen as a substitute for that important item. This shrub is common in the Otways, and is the tallest of our Pimeleas. The flowers appear along the branches in the leaf axils, instead of in nodding heads as with most of the smaller Rice-flowers.

All in all, the week-end was not a very exciting one from the botanical viewpoint, though the physical characteristics of the area provided much that was of great interest, and from the social angle our stay at The Bungalow was most enjoyable indeed.

MT. MACEDON - SOME GENERAL NOTES (Cont'd.)

Common and Botanical Names of the Plants Discussed (in the same order as in the article).

Prickly Currant Bush	Coprosma quadrifida
New Zealand Looking-glass Bush	Coprosma lucida
Rough Coprosma	Coprosma hirtella
She-oaks	Casuarina species
Tasman Flax-lily	Dianella tasmanica
Purple Apple-berry	Billardiera longiflora
Thatch Saw-sedge	Gahnia radula
Messmate	Eucalyptus obliqua
Manna Gums	" viminalis
Snow Gums	" pauciflora
Blue Bells	Wahlenbergia consimilis
Self-heal	Prunella vulgaris
Christmas Bush	Prostanthera lasianthos
Clematis	Clematis aristata
Forest Wiregrass	Tetrarrhena juncea
Appleberry	Billardiera scandens
Old Man's Beard Lichen	Usnea barbata
Varnish Wattle	Acacia verniciflua
Hazel Pomaderris	Pomaderris aspera
Hop Goodenia	Goodenia ovata
Rough Bush-pea	Pultenea scabra
Violets	Viola hederacea
Forest Pennywort	Hydrocotyle geranifolia
Kidney-weed	Dichondra repens
Tough Rice-flower (Bootlace Bush)	Pimelea axiflora
Gnat Orchid	Acianthus exsertus
Blunt Tongue Greenhood	Pterostylis obtusa
Mosquito Orchid	Acianthus reniformis

* * * * *

Groups at Mt. Macedon.

Photos. by Frances Poole.

MT. MACEDON FUNGI

GORDON McCARTHY

Fungi observed during the Club's weekend excursion to Mt. Macedon, included indigenous species growing in the native bushland, and introduced species growing beneath the introduced trees, mainly the pines.

The greatest number and variety were evident during a hike through the bush to the "Camel's Hump". In one small area of a few square feet, five different varieties were counted, but alas, not identified. The most prolific were clumps of Coral Fungi (Clavariaceae). This particular example was the large pink and orange cauliflower-like Ramaria ochraceo-salmonicolor, growing in clumps six inches high and broad.

Among the gilled "Agarics" showing through the leaf mould and moss was a small yellow-brown, bell-like specimen Galera hypnorum. Two of our smallest agarics were noted growing on logs and tree trunks. The largest having 1/2" diam. grey white caps, was Mycena subgalericulata. The smallest, with caps not much bigger than pin heads, was Mycena subcapillaris.

Only one Earth Star (Gasteromycetae) was recorded. Bright orange and red bracket fungi brightened the decaying logs, which were also host to patches of white jelly fungi.

Two varieties of small bright yellow club-like fungi were discovered growing densely on small pieces of dead branch, they were thought to be varieties of Clavariaceae.

Blood red caps, covered with snow-white nodules, betrayed the beautiful, but poisonous, introduced Amanita muscaria, the Fly Agaric.

The remaining two introduced species are both edible. The Safron Milk Cap (Lactarius deliciosus) is a large orange-red fungi, with salmon orange gills. And Boletus luteus is also large, with a yellow-brown top, but in place of gills underneath, has yellow pores. The fungal threads of both these species have a symbiotic relationship with pine tree roots.

Members took the only way possible of preserving the beauty of these plants, that was with their cameras.

* * * * *

IT'S WORTH BEING STUCK IN THE MUD

VALDA DEDMAN

Some people might think it peculiar for a woman to spend an hour on a glorious autumn day creeping over smelly mud, and actually enjoy it. But this is exactly what I did last Easter at Eden, on the south coast of New South Wales.

Lake Curalo, in the low lying area behind the sand dunes, is a wildlife sanctuary and a haven for waterbirds. Normally the lake empties into the sea, but two years of drought had caused the outlet to be blocked by a sandhill, and lowered the water level to such an extent that beyond the reeds normally fringing the edge there was a large expanse of black mud, thick and rather smelly from decaying vegetation and water life. It was across this soft mud that I crept one morning, with binoculars and camera, for there was a great group of birds feeding in the shallow water, a study in black and white and grey against the blue of sky and lake.

The great attraction for most of them was a shoal of mullet and I could observe the different methods of feeding of the various species.

A pair of pelicans, two amiable giants, swam in the centre, thrusting their pink bills sideways into the water. As often as not the bills came up empty, but when a fish was caught, the birds would tilt back their great heads, and I could see a bulge move down out of the pouch into the throat.

The little pied cormorants were also swimming, submerged but for the curve of head and neck. From time to time even this would disappear into the water after a fish, to emerge a few minutes later and then jerk backwards and upwards as the catch was swallowed.

A royal spoonbill was there on the edge, moving quietly on strong dark legs and systematically seiving through the mud with his black shovel bill. The tall white egret, on the other hand, walked calmly along, pausing to look and listen; then the S-curve of its white neck would unfold and the yellowish beak-spear would jab forward into the shallow water. Sometimes it stood, on one leg, shoulders hunched, and it was only when it stretched to its full height that I realised what a tall bird it was, as big as the ibis.

Several white ibis steadily probed the mud with slender down-curved

IT'S WORTH BEING STUCK IN THE MUD (Cont'd.)

black beaks. The poor birds were harried all the time by the silver gulls, especially when they brought up a morsel tangled in green weed, which was therefore hard to swallow quickly. They were not above snapping at the gulls when the latter became too annoying, and I cannot say I blamed them. The gulls did not bother to forage for themselves.

To the side of the group a white-faced heron stood motionless, somewhat aloof. A slight breeze ruffled the fine soft-grey plumes on its back, and raised a crest on its head, thus making the contrast of its coffee coloured breast more noticeable. I felt it would rather have been fishing by itself.

As I approached ever closer the cormorants were the first to be alarmed. With a great flapping the whole group of twenty or more rose out of the water and flew to the other end of the lagoon. (The cormorants were always the most wary of all the birds unless there were spurwinged plover around to call the alarm.) Next the white-faced heron took off, to feed all alone across the water. I think he was happier this way.

I shifted my gaze to watch him, and then, barely discernible among the buff-white dead Australian horn shells left high and dry by the receding water, I caught sight of a group of red-capped dotterels. I knew them at once, for I had seen them before, one blustery day when they had come to the lagoon for shelter. There were fourteen or fifteen of them, mostly standing on one leg, bodies facing into the wind, but heads tucked back. Three or four were males with rusty heads and pale fronts; the rest, juveniles and females, were of more sober hue.

I turned to the main group again. The pelicans had sailed off by themselves, two majestic galleons. I did want a photo of them, as close as I could get without a telephoto lens, so on I crept, until, finding my presence intolerable, the ibis took off on beating wings, honking all the while. A repeated flap-flap-glide took them to the other end of the lake. The egret then flew off with a steady flap-flap of its wings, long legs trailing.

Finally, all but the gulls had gone. They were not particularly interested in me, nor I in them, so I set off in pursuit of the pelicans once more. Now they were standing, heavy bodies on short thick legs, in very shallow water half way up the lagoon. Slowly I moved along the edge of the water. The mud became blacker and tackier, and before long I had to abandon my thongs and walk barefooted in the soft ooze. Soon even that was too difficult to do without sinking and squelching, so I entered the shallow water and, camera held to my eye, ever so quietly

IT'S WORTH BEING STUCK IN THE MUD (Cont'd.)

walked sideways towards my "prey", trying to make no more noise than a plopping mullet. Those pelicans knew I was no fish, though, for every time I was just about close enough for a good "shot", they waddled a bit further away. Occasionally they gave their curious call, a low-throated honk like a door creaking in the middle of the night. I tried approaching more directly, through deeper water, but this was difficult as I was wearing rather tight jeans that were not easy to roll up, and every now and then I sank into a soft hole. I suppose I should have cared less about my trouser ends getting wet, for as I put a hand down to give a last desperate hitch, the pelicans decided the bobbing female was more than they could bear, and they took off on powerful wings and soared away high into the sky.

What a change of character! No more the comical clowns, waddling in the shallows, but lords of the air. Round and around they circled effortlessly, bills out-thrust, bodies no longer heavy, but tucked away in a curve. Their great wings were outspread and the primary feathers acted as aerofoils as they used the air currents to carry them up and up. Their majestic soaring reminded me of a wedgetailed eagle's flight, and then, to my delight, there was an eagle, just coming out of the bushland at the head of the lagoon. But the pelicans outsoared even him. I saw the eagle flap his wings once, but never while in the air did the pelicans beat their wings all the time I watched them.

Wedgetailed eagles seemed to be common in the area. I had often seen them round Lake Curalo, and at the Kiah estuary, a few miles away. At the Kiah, too, I had watched a pair of white-breasted sea eagles soar over the water, and land in a dead tree near the shore.

I watched the big birds until they were mere specks in the sky, then I came back to those at the end of the lagoon. Most of them had congregated on a spit of sand. There were my wary friends from the other end, but as well I could see a few chestnut teal huddled together. Two swans glided through the water, and a slaty-grey reef heron was fishing by itself. The eastern curlew was not about, seeking food with its curved beak, but a pair of pied oystercatchers were probing the mud with their blood-red beaks. I had seen all three at the Kiah the day before, together with a pair of terns I had wanted to have a closer look at. My luck was

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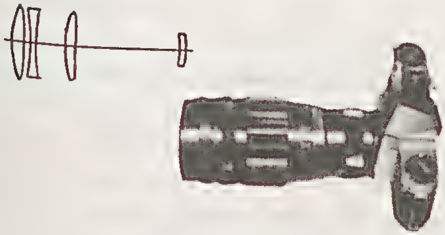

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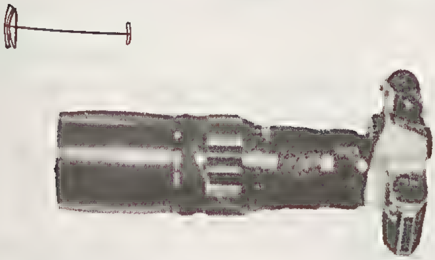

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IT'S WORTH BEING STUCK IN THE MUD (Cont'd.)

in; now I saw them at the edge of the sandspit. I was certain they were Caspian terns because of their great size, thick red bills and dark legs, but their description did not quite tally with those in the books I had consulted. All my references said Caspian terns have black heads, but these two had only a black eye-stripe, although the top of the head was a somewhat darker grey than the soft clear grey of their bodies. Now and again they raised their wings skyward in typical tern fashion and I noted the dark tips.

For a long time I stood and drank in the scene, but eventually I had to go. I left behind the clink-chink song of the bellbirds in the bushland, but the reed warblers threaded their song through the rushes as I squelched through the mud back to the caravan park. Here the little wattle birds greeted me with their strange cry of "kicky-kocky", the wrens were chittering in the dense bushes and the willy wagtails scolded me noisily. My feet were covered with very tenacious black mud, but I did not care. My mind was full of impressions of a most happy hour. And I never did get that photo!

* * * * *

ULUPNA ISLAND TO BE FLORA & FAUNA RESERVE

BY JACK WHEELER

Advice has just been received from the Minister of Lands, The Hon. W.J.F. McDonald, that approximately 1750 acres, known as Ulupna Island situated in the Parishes of Ulupna and Strathmerton is to be proclaimed a Public Purposes (Flora and Fauna) Reserve.

The area is most attractive, featuring water fowl and red gum forest.

Congratulations to Mal O'Malley and Wally Stebbings and their Committee for their continued efforts to have this area proclaimed.

(Mr. Stebbings is a regular subscriber to our Geelong Naturalist, and takes a keen interest in our Club activities.)

* * * * *

A FLINDERS RANGES TRIP

PETER FAGG

The Flinders Ranges will delight any person. But a naturalist's delight will go deeper than that of the pure sightseer. The Flinders will captivate the geologist, the ornithologist, the botanist, and the photographer.

With the reds and ochres of the raw rock faces; the sinuous "gum-creeks" winding over plain and through gorge; the stumpy-tailed lizard casually crossing the dusty track, the Flinders are really something to see, and to get the feel of.

The Ranges, first recorded by Matthew Flinders in 1802, begin about 120 miles north of Adelaide and head roughly NNE for a further 300 miles. The series of long ranges and hills are basically quartzite (or hardened sandstone) of Proterozoic origin. Strong erosion, after a Tertiary uplift is responsible for the present inviting ruggedness.

A friend and I spent two rewarding weeks touring to, around, and home from, The Flinders, in September 1968. Several of the highlights of our trip may entice others into these parts.

ALLIGATOR GORGE

The Alligator Gorge (see sketch plan) and its catchment area, form a National Park. Near the gorge, large (native) sugar gums (Eucalyptus cladocalyx) blend with the textured dark green of the cypress pine (Callitrus columellaris glauca). The facetted, sheer-walled gorge, like all of the other Flinders gorges, is lined with ancient river red gums (E. camaldulensis). On their upstream side, many of these gums have scarred butts - attesting to damage by debris hurled at them irregularly by a roaring torrent.

The falls which we found after following the left hand fork upstream past "The Terraces" are worth the short walk, as are the "jaws of the alligator" downstream from the point of descent.

QUORN DISTRICT

Quorn, with its wide gravel streets and shady verandahed empty shops, still exudes a "pioneer" atmosphere of a period long past. From Quorn, the route to take is via the Warren and Buckaringa Gorges, and Proby's Grave, to meet the main Quorn-Hawker road at deserted Gordon. After a good rainy season, the flat country crossed after Buckaringa is blanketed with golden everlastings and russet legumes. These, against purple hills and a flawless sky, complete a picture to rival the gorge-type scenery.

A FLINDERS RANGES TRIP (Cont'd.)

BUNYEROO AND BRACHINA

Bunyeroo Valley presents a vista of unique beauty. Its slopes, clothed in the blue-purple of salvation jane (Echium lycopsis plantagineum) and complimented by the dull reds of the rosy dock (Rumex vesicarius rosea), are balanced by the distant Wilpena Pound peaks. Out of the shaley bed of the Bunyeroo Gorge, the road follows through to Brachina Gorge and the Aroona Valley. (Incidentally, all "ch's" in The Flinders seem to be pronounced as in "church".) There are, on the 4-mile trip from the turn-off to the old Aroona homestead, 39 countable creek crossings!

The fiery Brachina Gorge is spectacular and should not be missed.

LEIGH CREEK DISTRICT

Just west of Beltana, on the main road to Leigh Creek, there is a substantial cairn, whose plaque praises the work of The Smith of Dunesk Mission. The memorial was erected in May, 1961, by members of the Geelong College Exploration Society.

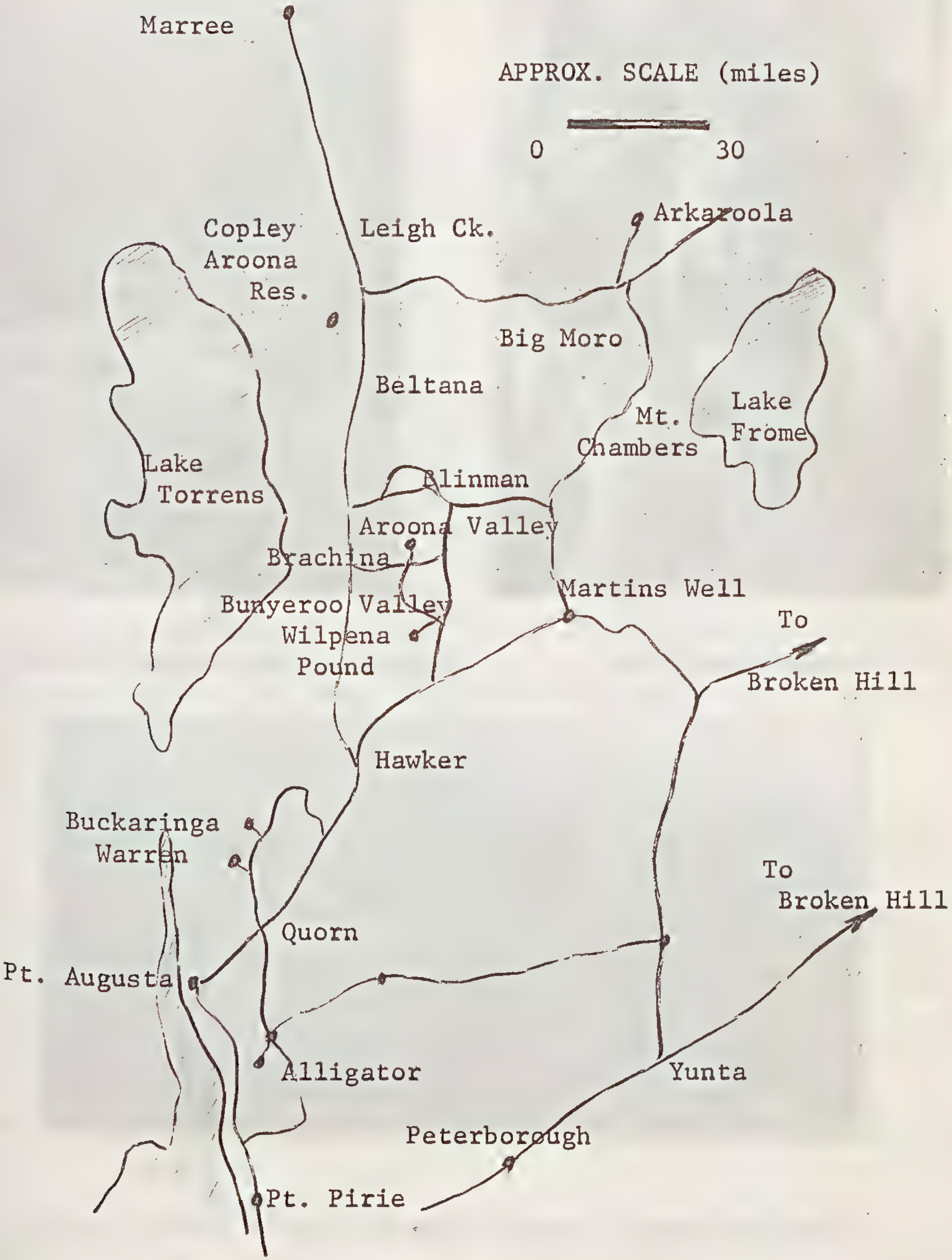
Multi-hued steep-sided hills cradle the impressive Aroona reservoir, south-west of Copley. Constructed in 1955 by The Electricity Trust of South Australia to supply water to Leigh Creek, the reservoir relys upon summer thunderstorms to fill its 1,650 million gallon capacity.

Leigh Creek, the town set up in 1948 by The Electricity Trust to open-cut mine black coal, is a pleasing tree-lined "oasis". The coal is railed to Port Augusta to be burned for electricity generation. With a population of 1000, Leigh Creek is the largest town between Port Augusta and Alice Springs.

BIG MORO

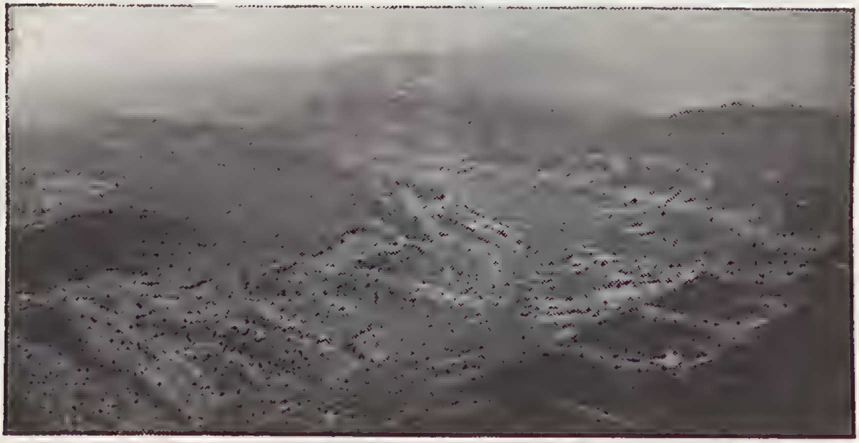
Big Moro Gorge, although inaccessible to low-slung or underpowered vehicles, is a fascinating area for the more adventurous. The permanent water holes in its calcite-veined rock bed, plus its unusual share of plant and bird life, made this remote spot a favorite with us. Blunt-budded red gum (E.camaldulensis var. obtusa), curly mallee (E. gillii), emu bushes (Eremophila spp.), and hop bushes (Dodonuea spp.), are some of the plants there. Zebra finches, spiny-cheeked honeyeaters, herons, and the ubiquitous galahs, were common. A few miles south of the turn-off to Big Moro, the scarlet, eye-catching Sturt's Desert Pea, was keenly photographed.

Some Spots In
THE FLINDERS RANGES



Sturt Desert Pea

Brachina Gorge in our '39 Chev.



Flinders Ranges - north from St. Mary's Peak Wilpena

Photos. by Peter Fagg.

A FLINDERS RANGES TRIP (Cont'd.)

Rugged, remote, Arkaroola (see map) is the gemmologist's happy hunting ground. Here, a modern "Dude Ranch" was opened in 1968 to cater for the expected hordes of "rock-hounds"!

MT. CHAMBERS

Mt. Chambers Gorge, located near the S.W. corner of Lake Frome is a favorite with many people. On a pre-breakfast hike we spotted one euro, a member of the wallaby family, heading into the steep, barren hills which flank the gorge; and a black-fronted dotterel, walking on the slime-covered waterholes, was identified.

This gorge is huge in length and depth - being easily 500 feet deep, and about two miles long. Four-wheel drive vehicles can pass through it.

WILPENA POUND

We saved this, the most talked about part of the Flinders, till last. Physiographically, the Pound is a remnant of quartzite strata, shaped like the bowl of a giant shallow spoon. At the NW end of the Pound, deep Edeowie Gorge is worth the walk. It is definitely not the drive-through kind, but its small falls, and finely dissected towering sides impressed us most of all The Flinders' gorges - notwithstanding that litterbugs had tainted the natural beauty of the creek bed.

The panorama from St. Mary's Peak (3,882') tok our breath. The patterned blue ranges to the north, Lake Torrens to the west, the Pound itself to the south, and the rolling sheep country to the east - all views were magnificent.

TO BROKEN HILL

Homeward bound, we followed an adventurous RACV route to Broken Hill through Martins Well homestead, along part of the London-Sydney rally route.

The bird life in this scrubby, arid, vegetation was a treat. Being rank amateurs, one of us would describe the bird through binoculars, while the other would feverishly flip through "What Bird is That?" for its name.

Some birds identified were: Masked Wood-swallow, Crimson Chat, Crested Pigeon, Ground Thrush, Cinnamon Quail-thrush, Red-backed Kingfisher, and the Fairy Martin.

I certainly hope to spend another absorbing fortnight in The Flinders Ranges.

"WHILE WE SLEEP"

L.W. ELMS

When the hour gets late, it is customary for us human beings to put out the fire, switch out the light, and get off to bed. But what happens at the same hour in the realm of Natural History? Do all Nature's Creatures go off to bed too? Far from it!

As darkness settles in the lonesome koala realises he has eaten all the choicest gum tips in his present tree, so he climbs down, ambles across to another tree, and climbs up to a new perching spot which he might occupy for some six or seven days. At certain seasons he might even select such a new tree because it already has another attractive koala in it!

The Boobook Owl leaves his nest at dusk and goes searching for a stray mouse or some such creature for his supper. The bats and gliding possums also emerge and search for food, as also do the wombats who have been asleep in their burrows all day.

The wildlife down at the swamp becomes noisy with the frogs and toads competing with the nearby cicadas in a battle of sound. The yabbies, fearing a flooding of their tunnels, emerge to build higher the clay bottleneck structures, and thus prevent any flood water entering their homes. The Termites, which are blind and avoid the light, consider the evening an appropriate time to start their eating of the timber near which they live. The spiders come out and build their beautifully shaped webs between the trees, and in the early morning light we can see them sparkling with the dew on them.

The shrubs and trees are not idle in the hours of darkness either, and they give off large quantities of oxygen and water vapour from the stomata pores on the underside of the leaves. In the gum and wattle trees, the rising sap and gum emerge from cracks which may have occurred in the bark, and in the morning we find droplets of gum hanging down along the tree trunk, or dropped on to the ground beneath the tree. Several flowers close up as the evening darkness arrives to protect their pollen from moisture, but they open again at sunrise next morning. In the case of the Austral Blue Bell, it is often found that a small black wasp has entered the flower before it closes up, and he is thus assured of a warmer rest throughout the cold night. Mushrooms and other fungi seem to grow best at night, and can often be found in the early morning in places where they were not visible on the previous evening.

"WHILE WE SLEEP" (Cont'd.)

In the realm of birdlife, there are many tasks performed at night. The first male muttonbirds to arrive at the rookery have to clean out last years burrows to provide suitable nests for the new season. Later, when the hen birds are on the nest, they come again every night with a crop full of marine food, and feed the hen bird on her burrow. The Fairy Penguins are renowned for their habit of returning each evening after a day in the ocean, and they then attend to their domestic affairs on their nesting ground at night. Most other birds, during the breeding season, have to sit on the nest day and night to hatch out their eggs, and the Mallee Hen has to check the temperature of the mound and adjust the compost to maintain a constant heat. Many birds therefore seem to be busy all day and all night too.

Along the seashore, whilst all this is going on in the bushlands, the tides keep moving in and out, exposing shells and seaweeds, and stranding small marine animals which thus form the next days meals for the hundreds of seabirds and crabs. It has also been proved that shoals of fish move from one feeding ground to another during the hours of darkness.

With the cooler night air conditions, mists and vapours will settle down into the valleys, and with the rising temperature of the air after sunrise next day, they will rise again up to the hilltops. Thus we see that the clouds are on the move during the night hours also.

Even in the realm of Geology there is action going on at night. The sun shines strongly on a mass of rock during the daytime, and it expands. But at night when it cools down again, it will contract, frequently causing small cracks into the rock mass. Then comes a frosty night after rain, and the freezing of the water in these crevices causes such an expansion of the water as it turns into ice, that the rock becomes split apart, and shales and sandstones are disintegrated in this manner.

And so we see that while we are asleep in bed throughout the night, many of the objects of Natural History are roused into action. The birds and animals prepare themselves for the coming day, and when we get up, they do the reverse and go - "Off - to - Bed".

* * * * *

A QUEENSLAND WONDERLAND

LILIAN MEMMOTT

Binna Burra Lodge, one needs a month, six months, a year to explore this mountain paradise. We were there for just one night. Happy to find a camping site as we had no idea where we were going to sleep. Darkness fell as we ate our meal by the kerosene lamp light.

It was a shadowy world outside. An owl sat on a signpost watching and listening as we talked to a fellow camper,and we could hear the hoots of other owls.

In the early morning we stood there on top of the world to look down on the clouds below with mountain peaks peeping through. We saw the most gorgeous sunrise and heard the call of the Currawong and the whiplike sound of the Whip-bird, then the dear old Kookaburra. How pleased we were to hear his laughter. We had heard so many tales about the Queensland Jackie, that none were up here, there were some but they made no sound, some did but it was a weak imitation and so on. It gladened our hearts to know he was there with his cheeky laughing call. We did notice that they were slightly different in colour to the Victorian ones. We realised too how many new calls there were and what a lot we had to learn and what a boon the Geelong Field Naturalists had been.

We packed camp and moved off back to Beechmont and to the Numinbah Valley. On this track we could look down into a basin of trees, from deep valley to mountain height, just trees. To us it was fantastic. A little further on we had to stop to gaze in wonder into a valley of a hundred hills, each one covered in bush.

The Numinbah Valley was another beautiful sight. Green and lush with a series of bushland ridges with buttress ridges extending to the valley below.

We drove on to the Natural Arch National Park. On the way we saw lots of Lantanas in bloom. The Park was a Naturalist's paradise. It seemed to feature every type of tropical growth typical to this part of Queensland and once again we realised what a lot we had to learn. There was the Fibrewood or Stinging Tree almost at the entrance, a greeting one would not forget if one brushed against it. The pathways led through a bushlike setting. We stopped to admire the Cathedral Tree, Watkins Fig or to give it its scientific name Figus watkinsiana. It was so fat that it had burst open to reveal"its innards". No need for transplants here as it seemed to

A QUEENSLAND WONDERLAND (Cont'd.)

have grown a spare lot of roots inside.

We clambered on to boulders in midstream to admire the huge formation of rock that formed the Arch. A waterfall cascaded down through a hole in the roof into a deep pool. Steps led under the Arch, which is a glow-worm cave at night. A bridge goes over the top and one gets a different picture from above, pool and rocks with a big fallen tree trunk lying across. We would have liked to linger longer but time would not allow.

Off again through more beautiful mountainous country. One could look from right to left and see mountains towering beyond mountains, all covered with trees.

This time we made for Springbrook and the Gwongorella (Dancing Waters) National Park. Here we saw the Purlingbrook Falls cascading down 410 feet and as we explored into some bush we came on a Bower Bird's playground. It was beautiful, like a basket with a lovely curved handle. There was no sign of the bird just brightly coloured pieces of blue, silver and pink that they like to collect.

Our weekend was complete when the Ranger gave us permission to camp right there in the Park of Dancing Waters.

* * * * *

EARLESS DRAGON LIZARD

In September 1968, Debbie Gellately a schoolgirl at Newcomb, obtained a specimen of the Earless Dragon Lizard Tympanocryptis lineata pinguicolla; although it was found near Newcomb, its precise source of origin was not known.

Another specimen of this lizard has been found, this time by Wayne Gladman of North Geelong, in July 1969; this second specimen was found under some stones near the Ballarat Railway-line crossing at Thompson Road in North Geelong.

Several years ago, Mr. Geoff Carr noted several dragon lizards under stones in Hamlyn Heights; these reptiles could possibly have been this same species.

NATURE'S INTANGIBLE WONDERS

L.W. ELMS

At both the indoor meetings and the outdoor excursions of our Field Naturalists Club, one of the most interesting features is the varied display of specimens drawn from the wide range of Natural History, as presented on the Specimen Table.

There are however many more marvels which are familiar to us all, but which are intangible, and cannot therefore be placed on the specimen table for examination.

For instance, on an excursion trip, how often has it appeared that the cars in front of us are running through sheets of water across the road. Yet when we reach that spot it is quite dry, and we realize we have seen a MIRAGE - a freak atmospheric condition resulting from heat and humidity. A somewhat similar occurrence takes place when we look at a RAINBOW. The colours are so bright that they seem to be painted on to the trees and to the hills behind them, but they are of course only the sun's rays broken up into the seven basic colours by refraction in the moisture laden atmosphere, and can only be seen when we have the sun directly behind us.

If we are uncertain of our direction of travel, we frequently take out a compass, and the needle immediately points to the north magnetic pole. Although we cannot see it, feel it, or otherwise detect it, the whole world is surrounded with this MAGNETIC FORCE. Some of Nature's creatures can however pick up the effect of this force without resorting to the aid of the compass as we human beings have to do. For instance in Northern Australia the Magnetic Ants build their huge mounds of earth pointing exactly North and South. The bees do likewise when building their honeycomb in the hive, and possibly even the mutton-birds and the homing pigeons have means of picking up these magnetic influences whilst making their remarkable long distance flights.

When on an excursion picnic we can often smell the scent of the flowers in blossom on one side of the road, and perhaps the scent of some other types of wildflowers on the opposite side. Just what is this SMELL? It is, of course, a quantity of very minute molecules carried on a stream of air from the particular source of the smell to the sensitive membranes in our nostrils. Without this miracle of Nature, many of our birds and animals would not

NATURE'S INTANGIBLE WONDERS (Cont'd.)

be able to find the carrion food on which they live.

These are but a few of the intangible marvels which surround us - all real enough in themselves, but yet intangible, such as echoes from a cave, the moonlight at night, eclipses of the sun and moon, the "Aurora Australis", shooting stars, and even the lovely patterns of stratus and cumulus cloud masses when colored by the sunset.

Field Naturalists will therefore be well rewarded if they lift their gaze above the commonplace levels of birds and plant life etc. which we normally examine, and search for and study the wealth of interest that can be found associated with - "NATURES INTANGIBLE WONDERS".

* * * * *

"TROUBLES OF A BIRD-WATCHER"

OONAH MCHAFFIE

What bird is that?
Give me the glasses do,
Here comes the cat,
The bird will fly too,
And that will be that.

The colour that I see
Would it be yellow
Or buff maybe?
The little fellow
Is very hard to see.

It could be grey or brown,
The colour's indeterminate;
Never to have it known
'T will be my fate;
What is that upon its crown?

Is it green or blue?
I feel quite sad,
I have no clue,
The light is bad;
And away it flew.

I looked my fill,
And away I came,
Empty of the will,
To find some fame,
My notes are nil.

And hopeless the book
Without some detail;
However long I look,
My task must fail
Whatever time I took.

* * * * *

AT RANDOM

KILLER OCTOPUS - by Jack Wheeler.

During mid-April, a sunday afternoon beach walk at Point Henry by Mr. & Mrs. D. Rawle accompanied by daughter Sandra, revealed a small octopus washed up on the beach dead. It was placed into a plastic container and delivered to the Geelong Field Naturalists Club for identification. The octopus had an overall span of eight inches and its dark blue rings on its body and tentacles were features which identified it as the deadly 'blue-ringed' species. To make sure it was packed and sent off to the National Museum for positive identification. In reply, the museum confirmed that it was a 'blue-ringed' octopus of adult size and its scientific name 'Talalochlaena maculosa' (Hoyle 1883). Several octopuses answering this description have been found in the Geelong district of recent months and they occur both in Port Phillip Bay and along the ocean reefs. This species is known for South Australia, Victoria, New South Wales and Queensland, and the museum says that it appears to be much more common in the southern waters of its range. Outside Australia it is known to occur in the Indian Ocean, mainly Ceylon and also is known in Japanese waters. This creature has no sting as many suppose, but in the centre of the mouth is a tiny parrot-like jaw which inflicts a bite from which poison glands transmit a deadly poison into a victims bloodstream. The poison glands are modified salivary glands opening by a duct into the mouth. The museum says that the poison is virulent and cases of human fatalities have been known.

The other known species Hapalochlaena lunulatus occurs in New Ireland and Torres Strait.

(A photo of this species was featured on the cover of our January Naturalist, 1969)

AT RANDOM (Cont'd.)

CATTLE EGRETS AGAIN - by Jack Wheeler

At Werribee there is a large colony of Cattle Egrets, 37 in all and bird observers are watching keenly to see if this colony will breed in the district this coming season. To my knowledge this is the largest flock ever recorded for this Geelong area, if not Victoria. Previous best in this district was 26 at Whittington in 1965. This present flock appear to be constantly associating with grazing cattle of which there are plenty at Werribee. Other reports of cattle egrets would be very welcome, particularly when coming into their beautiful and attractive mustard tan plumage for breeding.

MORE SWIFT NOTES - Rev. A. Eames

22/1/69- Blackwood. Sultry, 90°, 150 Spine-tailed swifts, circling very low 11.30 - 12.30.

The same flock at Shaw's Lake, Blackwood. Small lake about 100' long, surrounded by tall eucalypts. Many swifts flew low over the water, some with audible splash (heard by me 50' - 70' away).

A boy fishing nearby, said that earlier one of the swifts had hit the water too hard, and had just managed to flap across the water for about 50' to the shore, where it lay exhausted. When he went to pick it up, the bird flew away.

10/4/69 - Hamlyn Heights, Geelong. 11.00a.m. - 20 birds; 12.45p.m. - 10 birds. Very windy, N.W. wind, sultry, 92° max.; sunny until overcast at 4.00p.m. Cool change 4.45p.m., but very little rain.

The swifts (Fork-tailed) were flying N.W., fairly directly.

10/4/69 - Western Beach, Geelong. Between 3.30 and 4.42p.m., a total of at least 860 Fork-tailed were seen, most flying over Corio Bay. There were probably several thousand birds in all, by my observations only began at 3.30p.m. No more swifts after cool change at 4.45p.m.

* * * * *

"VENOMOUS AUSTRALIAN ANIMALS DANGEROUS TO MAN"

A BOOK BY J. ROS GARNET

There is in Australia a wide variety of animal species which are capable of, or potentially capable of inflicting a bite or sting which may endanger the health or life of a human being.

Because of the wide diversity of climate and habitat involved, species in doubt must include those found in tropical waters, the inland, and southern forests. With our relatively small population, the conflict between many of the species and human beings is very limited, so that there is with many species no confirmed cases of envenomation. Yet the potential danger is always present.

A book published recently by the Commonwealth Serum Laboratories and written by Melbourne Naturalist Mr. J. Ros Garnet, titled "Venomous Australian Animals Dangerous to Man" covers all of the species known or believed to be dangerous to man, and some species or groups are discussed in detail.

The text of the book is broken into sections covering three main groups, the first being marine creatures, the second Arthropods, and the third snakes.

Animals considered in the first section are sea snakes, fish which are poisonous or venomous, the stonefish, sea wasps, cone shellfish and the octopuses.

In the second section, Mr. Garnet has discussed the centipedes, scorpions, ticks and mites, and the spiders.

The last section deals with the snakes, and there are detailed descriptions of identification and distribution of all dangerous or potentially dangerous species; the treatment of snake bite is also discussed in detail.

A chart showing the classification of the "Phylum Reptilia" is appended, and throughout the book are excellent black and white photographs and drawings.

The use of scientific names throughout may at first confuse, but if the reader overcomes this, he will find a thoroughly readable and excellently documented book, one for every naturalists bookshelves.

(Review by Trevor Pescott)

JUNIOR PAGE

Naturalists in Geelong are fortunate in many regards, for we have close to our city a wide variety of habitats - types of country - each one with its own special flora and fauna. We have the ocean beaches, the bays, swamps, lakes, rivers, plains, heath, woodland and forest - and we can sample any by travelling less than 40 miles from home.

Which is your own favourite type of country? Perhaps it is the beach - at least in summer - for each rock pool hides some marine creature of strange shape and habits. Have you noticed the strange creatures clinging to the rocks like large red buttons? When the tide covers them, they open rather like a flower - do you know what these are called? Or it may be a swamp, where tadpoles, "toe-biters", water-fleas and other creatures abound - where do they go when the swamp dries out? Can you find out by your observations or by reading nature books?

You may like the You Yangs - dry sclerophyl forest is the way its flora is described - where a wide variety of birds are to be found. The You Yangs were never, at any time in history a volcano - as Mt. Anakie was - but do you know what the rocks that form the You Yangs are called?

The Otway Ranges are another fascinating place, where birds like the Rufous fantail and Satin Bower-bird are found, and where Bandicoots, Potoroos and Tiger-cats still survive. What, you may ask, is a Potaroo? Well, what is it - do you know?

On the next page are photographs of four subjects found around Geelong - do you know what they are?

Write to the Editor, "Geelong Naturalist", c/o 4 Victoria Terrace, Belmont 3216, if you know the answers to the questions above.

In the next issue of "Geelong Naturalist", we will print your answers, and any more information that may interest you.

* * * * * *

OFFICE-BEARERS 1969-70

President:

Mr. J. Wheeler, 19 Roslyn Road, Belmont. 3216.
(Phone: 43.3441)

Vice-Presidents:

Mr. J. Hunt, "Stone Chimney", Paraparap.
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Mr. J. Whitmore, 13 Fairview Street, Belmont. 3216.
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Hon. Editor:

Mr. T. Pescott, 4 Victoria Terrace, Belmont. 3216.
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Hon. Librarians:

Mr. G. Gayner, 95 Clarence Street, Geelong West. 3218.
(Phone: 9.4401)
Mr. J. Whitmore, 13 Fairview Street, Belmont. 3216.
(Phone: 43.5316)
Mr. I. Woodland, 33 Grant Street, Newtown. 3220.

Miss F. Poole, 134 Fitzroy Street, East Geelong. 3219.
(Phone: 21.1385)

Excursions Secretary:

Mr. J. Wheeler, 19 Roslyn Road, Belmont. 3216.
(Phone: 43.3441)

Committee:

Mr. R. Baldwin, Geelong Grammar School, Corio. 3214.
(Phone: 7.9206)
Mr. O. Andrews, 18 Margaret Street, North Geelong. 3215.
(Phone: 7.2759)
Mrs. B. Quirk, 36 Fairview Avenue, Newtown. 3220.
(Phone: 21.1229)

Published by

THE GEELONG FIELD NATURALISTS CLUB
Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in the month, at
8 p.m. in the McPhillimy Hall, St. George's Church,
Latrobe Terrace, Geelong

Visitors Welcome

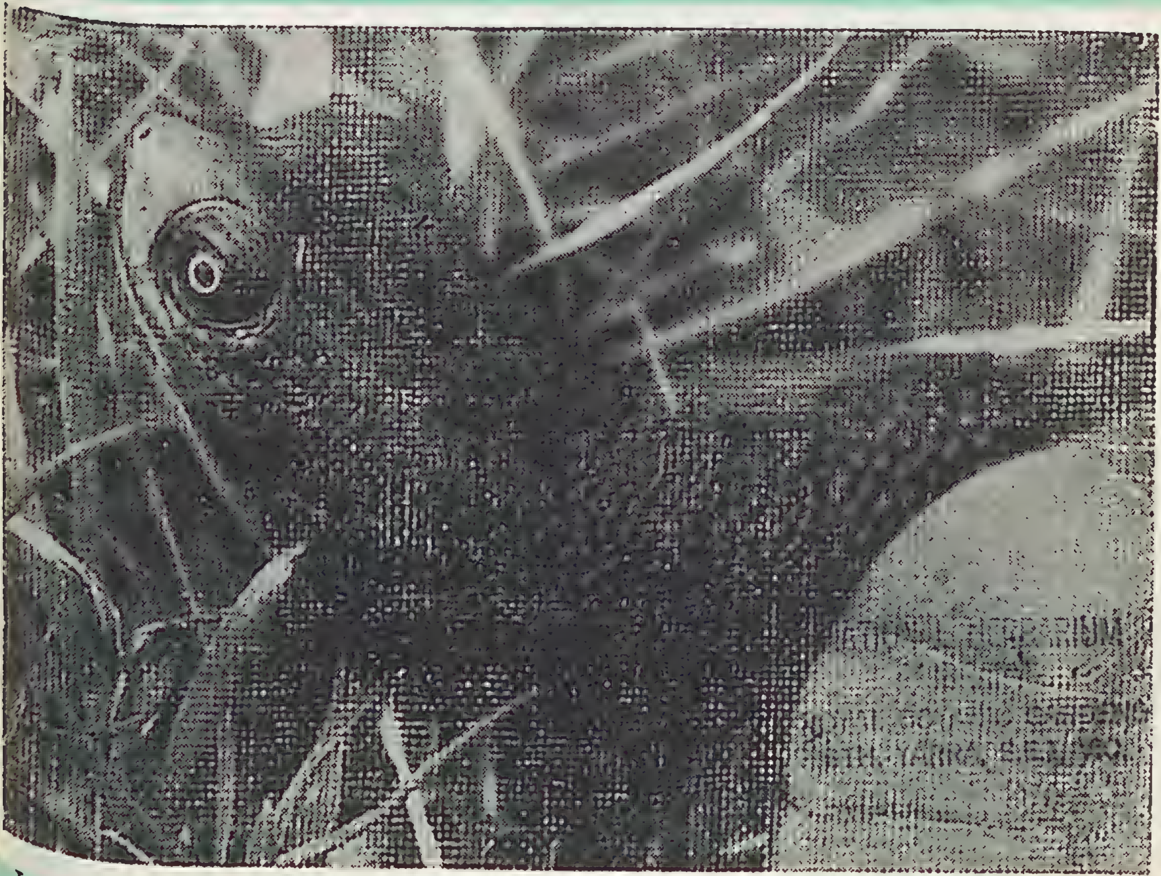
All papers submitted for publication in this journal should
be sent to the Hon. Editor

Ken. Jenkin Print

Vol: 6, No. 3
~~JANUARY 1969~~
NOVEMBER 1969
Price 25c

GEELONG NATURALIST

Journal of the Geelong Field Naturalists Club



LONG NECKED TORTOISE

Hon. Editor: Trevor Pescott

Registered at G.P.O. Melbourne for transmission by post as a periodical

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

MEMBERSHIP

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Subscription Rates are:
(Due on 1st April)

	Per Annum
Adult Membership	$2.00
Joint Membership	$3.00
Junior Membership	50¢
Subscription to Magazine	$1.00

COVER PHOTOGRAPH:

Long Necked Tortoise from Portland

by Trevor Pescott.

GEELONG NATURALIST

Vol.6. No.3.

EDITORIAL

November, 1969.

A growing number of naturalists are showing concern at the lack of protection for our native reptiles, protection we accept as elementary when applied to other forms of plant and animal life.

Tortoises and the larger lizard species are the most maltreated forms, and a television news item last month showing the capture, mass packing and transportation of large numbers of tortoises to pet shops highlighted the cruelty in the methods used.

The problem lies mainly in public apathy towards all reptile species, the same apethy, fear and superstition which has brought about the expression that "the only good snake is a dead one"!

Whilst this disinterest continues, the authorities concerned with fauna protection can not be expected to instegate any action which would bring about legal protection; protection is only as good as the policing of it ensures, and this in turn is only as good as available finance will allow it.

So we have two problems to overcome, if we decide that the reptile fauna is worth protecting as we protect other fauna forms - first, we must prove that the reptiles are worth protecting, and secondly we have to convince authorities that protection is necessary.

To overcome the apethy of both the public and the authorities is no small task, and it would seem that our first objective should be to have outlawed the present methods of capture, transportation and sale of the most vulnerable and mistreated reptile species.

TREVOR PESCOTT,

Hon. Editor.

WADERS OF THE GEELONG DISTRICT

Fred T.H. Smith, Kew

Although a non car owning resident of Melbourne, my interest in the waders - of the order Charadriiformes - has led me many times to the Geelong District in search of them. Most of my trips from Melbourne have been made with vehicle-owning, bird-watching friends. Sometimes Bird Observer Club excursions that I have attended, have been to that area; and a few times I have made my way by train. The Geelong District, besides being a very good bird area generally, is eminently suited to waders because of its lakes, marshes, streams, long shore-lines and plains. At present there seems to be no well defined boundary to the Geelong District, at least as far as natural history observations are concerned. The waders listed here have all been recorded from places as far apart as Werribee on the north side of Corio Bay, Mud Islands to the east, Lake Corangamite to the west and the southern coast to as far south-west as Apollo Bay. The list covers forty-six species of waders, some of which occur in the district regularly in large numbers; some regularly in small numbers; some are distinct rarities and three or four are vagrants. All the birds mentioned, but for the Oriental Dotterel and the Painted Snipe, have been seen by myself in the area: appended notes are largely from personal observations except where otherwise acknowledged. The main purpose of this article is to present a complete list of the Geelong District waders to date, with accompanying remarks and observations succinct but, it is hoped, not to the point of complete uselessness. Dates have been supplied only for some rarities and vagrants and where it is thought they may be of particular interest.

The field - or marsh - study of waders is recommended as a fascinating and rewarding branch of general bird observation. Part of the fascination comes from the realisation that most of the wader species recorded in the Geelong District are far-flying birds that breed only in the Northern Hemisphere, some as distant as north-east Siberia and Alaska. The rewards mainly come from learning to identify waders with confidence, and the occasional locating of a rarity.

Thirty two of these waders are true migrants: all migrate north and south but for the Double-banded Dotterel which comes south-easterly from the New Zealand region, for our autumn and winter.

WADERS OF THE GEELONG DISTRICT (Cont'd.)

The north-south migrants begin to arrive towards the end of August each year, and have mostly departed by the end of the following April. The best months to see them in maximum numbers are from October to March inclusive. Some of the non-migrants seem to be partly or largely nomadic, but most can be found locally throughout the year.

Some of the best places to see waders in the Geelong District are as follow: Werribee Sewage Farm ponds and marshes and the adjacent Longreef, also known as "the spit"; Avalon and Geelong Saltworks; Stingaree Bay; southern part of Lake Connewarre, from the Hospital Lake eastward to the Barwon River mouth; Reedy Lake; Swan Lake shores; Mud Islands; the salt lake and Cox Lagoon near Point Lonsdale; Lake Murthaghurt; Lake Corangamite and some nearby lakes, such as the southern shore of Lake Colac; parts of Lakes Colongulac, Bookar, Milangil, Coradgill, Terangpom and Martin's and Shallow Lakes. The southern ocean shoreline from Point Lonsdale to Apollo Bay does not have many waders, but one species - the Hooded Dotterel - is found there almost exclusively. The fields and plains about Geelong hold both the Spur-winged and Banded Plovers.

The list order and nomenclature follow that of "A Handlist of the Birds of Victoria"; by W. Roy Wheeler: but I have substituted Numenius for Mesoscolopax when referring to the Little Whimbrel.

TURNSTONE Arenaria interpres.
Not often noted away from Mud Islands, where over one hundred may be seen at times; mainly during spring and summer.

PIED OYSTERCATCHER Haematopus ostralegus.
Not uncommon about the shores of Corio Bay and at Mud Islands. This species breeds sparingly at both places.

SOOTY OYSTERCATCHER Haematopus unicolor.
An uncommon species in the Geelong District. Mostly observed singly; however, up to half a dozen may be seen at Mud Islands, and I once saw, on July 28, 1968, a similar number at the Black Rocks near Breamlea.

RED-KNEED DOTTEREL Erythrogonys cinctus.
This species regularly visits the Werribee Sewage Farm marshes, where it occasionally nests. Most often noted in spring and summer: up to eighty have been counted there in a day.

WADERS OF THE GEELONG DISTRICT (Cont'd.)

AUSTRALIAN SPUR-WINGED PLOVER Lobibyx novae-hollandiae.
A common and therefore well known bird about the Geelong District, where it breeds widely about the area.

BANDED PLOVER Zonifer Aricolor.
Not quite so well known as the Spur-winged Plover: nevertheless this species is not rare. Perhaps one reason is that it is more difficult to see than the larger bird, particularly when its back is turned. The bird nests locally.

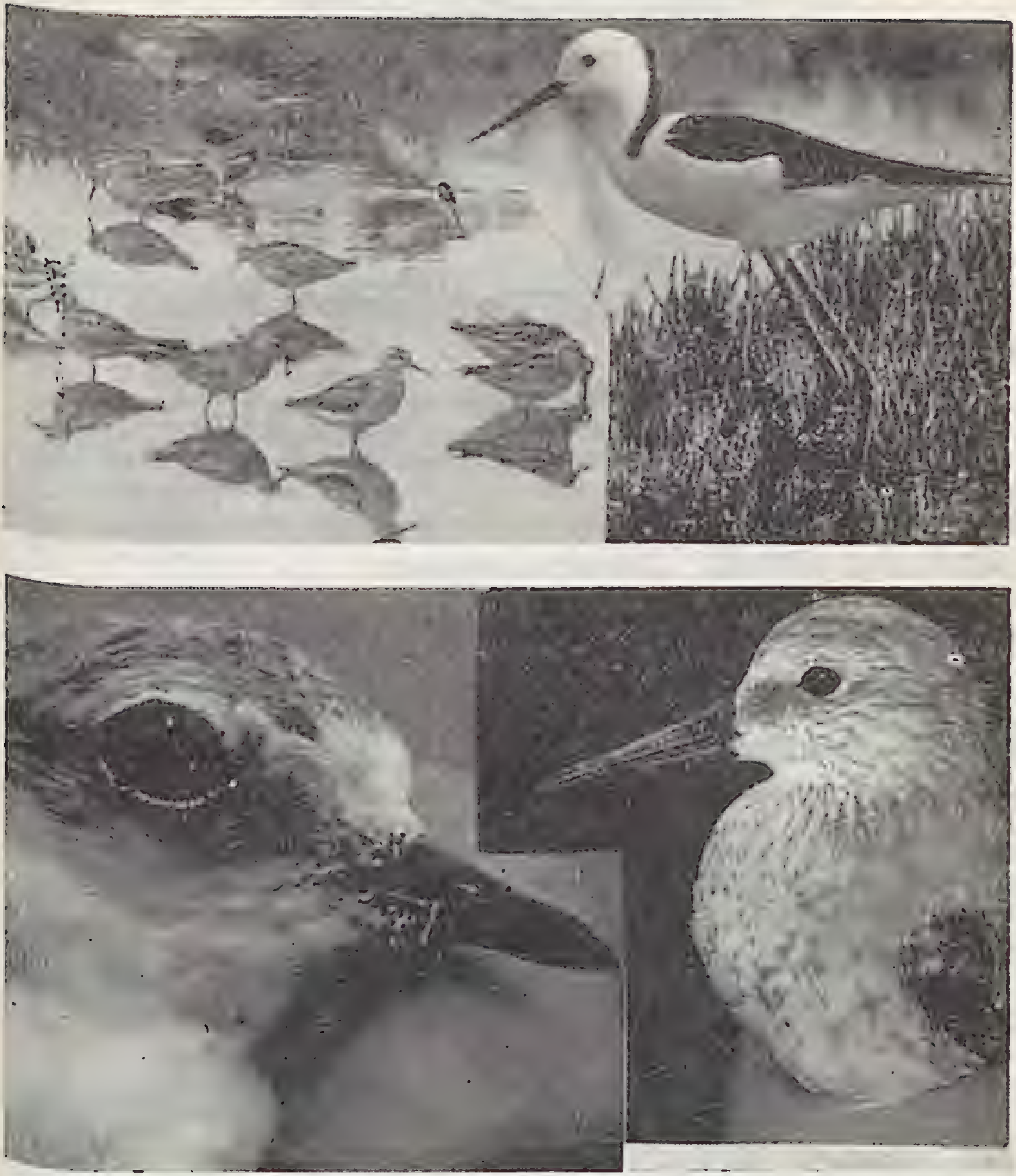
GREY PLOVER Pluvialis squatarola.
A regular spring and summer migrant to Mud Islands; where up to 300 may be seen some years. Also noted at Longreef, Werribee Sewage Farm, and Stingaree Bay; singly and in groups to six or a few more.

EASTERN GOLDEN PLOVER Pluvialis dominicus.
Another species that is most prevalent at Mud Islands. Over 100 are to be seen there at times, in spring and summer, and in smaller flocks at Point Kirk and Longreef, Werribee Sewage Farm; and Stingaree Bay.

HOODED DOTTEREL Charadrius cucullatus.
Found on the southern ocean beaches from Point Lonsdale to Apollo Bay in pairs, in spring and summer, when it breeds; and small groups during the autumn and winter. The species has almost disappeared from some beaches where years ago it was resident in small numbers, little doubt due to increasing human disturbance almost the whole year through. Occasionally it is reported from Mud Islands but I have not seen it there.

MONGOLIAN SAND-DOTTEREL Charadrius mongolus.
At times in the late spring and summer months up to 100 may be found on Mud Islands. Apart from there I have seen a few at Longreef, Werribee Sewage Farm; Stingaree Bay, and the Geelong Saltworks.

DOUBLE-BANDED DOTTEREL Charadrius bicinctus.
This species usually begins arriving, from the New Zealand region, about the end of summer. However, each year exceptionally early birds can be seen at Mud Islands by the end of January. From March to early September, Double-banded Dotterels are fairly widespread in the district. Some of the lakes near, and including, Lake Corangamite hold many of the birds; Lake Murdeduke being



Top - Sharp-tailed Sandpipers and White-headed Stilt.

Lower - Red-capped Dotterel and Knot.

Photos. by Trevor Pescott.

WADERS OF THE GEELONG DISTRICT (Cont'd.)

particularly well attended.

LARGE SAND-DOTTEREL Charadrius leschenaultii.
Occurs on Mud Islands during spring and summer in small numbers. I have never seen more than about ten on any one visit. Other than there I have seen an odd one at Lake Borrie - when dry - and Longreef, Werribee Sewage Farm.

ORIENTAL DOTTEREL Charadrius veredus.
The only records of which I am aware are those in "A Handlist of the Birds of Victoria" Wheeler, as follow: "Corio Bay 1902". "and Queenscliff 1960".

RED-CAPPED DOTTEREL Charadrius alexandrinus.
Plentiful and breeding about bay and lake shores; Mud Islands, Werribee Sewage Farm, Avalon and Geelong Saltworks. Lake Murdeduke is well frequented by this species, as is also Lake Corangamite and some nearby lakes.

BLACK-FRONTED DOTTEREL Charadrius melanops.
Not quite as plentiful as might at first be thought. A few are found along the banks of the Barwon; particularly near Geelong City and at lesser streams. Others may be seen at Lascelles Dam, on Wooloomanata, and the larger earthen banked water storage tanks about the district as well as some muddy edged freshwater marshes. It breeds where found.

WHITE-HEADED STILT Himantopus leucocephalus.
This bird may be found all about the district at fresh and salt water marshes, where it breeds. Werribee Sewage Farm; Reedy Lake, southern shore of Lake Connewarre; Avalon and Geelong Saltworks are all good places to see the species.

BANDED STILT Cladorhynchus leucocephalus.
Sometimes at the Geelong Saltworks in hundreds: normally a few are to be found there each year. I have seen small groups, to about 100 birds; also at the Werribee Sewage Farm, Avalon Saltworks and Lake Murdeduke. The species is usually noted during the autumn and winter months, but sometimes in early spring and late summer. It is not known to breed in Victoria.

RED-NECKED AVOCET Recurvirostra novae-hollandiae.
Occasionally seen in hundreds at Werribee Sewage Farm and Avalon and Geelong Saltworks where it sometimes breeds in small numbers.

WADERS OF THE GEELONG DISTRICT (Cont'd.)

EASTERN CURLEW Numenius madagascariensis.
Mud Islands may hold well over 1000 of these birds during the spring and summer of some years. They feed a great deal in the vicinity of Swan Bay. Other places where they can be seen in lesser numbers are: Longreef, Werribee Sewage Farm, Geelong Saltworks and Stingaree Bay, and the southern side of Lake Connewarre to near the mouth of the Barwon River.

WHIMBREL Numenius phaeopus.
A rather rare bird in southern Victoria - it does not occur inland -; it is certainly scarce in the Geelong District where one can hope to see an odd one or two at Mud Islands during spring and summer. I have seen no more than four there at any one visit. At Longreef, Werribee Sewage Farm, I can remember noting at least two over fifteen years. One was there early in 1969. This race N.p.variegatus shows little white on the rump at times and if not seen well could be mistaken for the dark-rumped American subspecies N.p.hudsonicus.

LITTLE WHIMBREL Numenius minutus.
A decided rarity anywhere in Victoria: I have seen three at different times at Werribee Sewage Farm, in recent years and one at Lake Murdeduke; and have heard of two others at the latter place. It is a spring and summer visitor.

BLACK-TAILED GODWIT Limosa limosa.
Another rare spring and summer migrant; this bird is most often seen singly, or in twos and threes. I once saw eleven together at the Werribee Sewage Farm. The species has been recorded from Mud Islands, and Avalon and Geelong Saltworks.

BAR-TAILED GODWIT Limosa lapponica.
A common species at Mud Islands during spring and summer, where some years up to 2000 of the birds are present. Sometimes noted in much smaller numbers at Longreef, Werribee Sewage Farm; Stingaree Bay and Swan Bay.

WOOD SANDPIPER Tringa glareola.
An uncommon bird in the Geelong District. Most of my own records come from the Werribee Sewage Farm; where from one to a dozen may be seen in spring and summer. Probably Reedy Lake and the southern shore of Lake Connewarre would also be favoured by the species.

WADERS OF THE GEELONG DISTRICT (Cont'd.)

GREY-TAILED TATTLER Tringa brevipes.
Mud Islands are the main spring and summer haunt of this wader in the Geelong District where up to forty can be seen at times. It is similar to the Wandering Tattler T. incanus which has not yet been reported from Victoria. All Tattlers that I have viewed closely at Mud Islands have so far proved to be T. brevipes. The Grey-tailed has a shorter nasal groove, a less distinct breeding plumage and different calls than the Wandering.

COMMON SANDPIPER Tringa hypoleuca.
Decidedly uncommon about the Geelong area. I have seen a few at the Werribee Sewage Farm, in spring and summer, otherwise I would expect it to occur occasionally at the mouths of some streams entering the southern ocean from Anglesea to Apollo Bay and along the banks of the lower Barwon.

GREENSHANK Tringa nebularia.
A regular spring and summer migrant in small numbers, with a few usually remaining for the winter each year. It can be readily found at Werribee Sewage Farm, Avalon and Geelong Saltworks, southern shore of Lake Connewarre to the Sheepwash, Swan Bay and Mud Islands.

MARSH SANDPIPER Tringa stagnatilis.
Another regular spring and summer migrant in small numbers to Werribee Sewage Farm, Avalon and Geelong Saltworks and southern shores of Lake Connewarre. The Geelong Saltworks is well favoured.

TEREK SANDPIPER Xenus cinerea.
An extreme rarity anywhere in Victoria. I have seen one at Mud Islands, two or three at Werribee Sewage Farm, and have heard of a few other records from the Geelong District.

CURLEW SANDPIPER Erolia ferruginea.
One of the really plentiful spring and summer migrants; with a few always to be seen in winter. It can be found at practically all lakes, swamps, marshes, the two saltworks and Mud Islands.

RED-NECKED STINT Erolia ruficollis.
I would rate this bird as the most common of the spring and summer migrants; with good numbers wintering in the district each year. Widespread in the area, it occurs in thousands particularly at the Werribee Sewage Farm, Avalon and Geelong Saltworks, southern

WADERS OF THE GEELONG DISTRICT (Cont'd.)

shore of Lake Connewarre, Swan Bay, Mud Islands, Lake Murdeduke and other Western District lakes.

LONG-TOED STINT Erolia subminuta.
One of the district rarities: this species was not recorded in the Geelong District till January 1966. Each wader season since - August to April - odd birds have been noted at the Werribee Sewage Farm. On February 6, 1966, there was one at Lake Murdeduke.

SHARP-TAILED SANDPIPER Erolia acuminata.
After the Red-necked Stint this would be the commonest of the migrant waders in spring and summer. To see a healthy one in winter is most unusual. It occurs in thousands at Werribee Sewage Farm, Avalon and Geelong Saltworks, southern shore of Lake Connewarre, Swan Bay, Lake Murdeduke and some other Western District lakes.

PECTORAL SANDPIPER Erolia melanotos.
Most likely overlooked because of its similarity to the Sharp-tailed Sandpiper: this species comes to the Werribee Sewage Farm each spring and summer. There, most seasons, it occurs sparingly with perhaps an average of about a dozen for the whole farm area each year. I have seen a few at Lake Murdeduke and one at the Geelong Saltworks, in March 1967.

KNOT Calidris canutus.
This species has its stronghold on Mud Islands during spring and summer: when up to 500 of the birds can be seen some seasons. Other places where it can be found occasionally are Longreef, Werribee Sewage Farm and Stingaree Bay.

GREAT KNOT Calidris tenuirostris.
This large Knot is rarely seen away from Mud Islands where, in spring and summer, from 100 to 250 may be present some years. Odd birds sometimes occur at Longreef, Werribee Sewage Farm.

SANDERLING Crocethia alba.
Very rare in the Geelong District: I have seen only one, at Queenscliff. There is another record from Barwon Heads.

BROAD-BILLED SANDPIPER Limicola falcinella.
Another very rare migratory wader in Victoria. My own Geelong District records are from Werribee Sewage Farm and Stingaree Bay. At the latter place I once saw about six scattered over the mudflats.

WADERS OF THE GEELONG DISTRICT (Cont'd.)

RUFF Philomachus pugnax.
A few Ruffs are getting to Australia from time to time: I have seen two in the Geelong District. One was at Lake Murdeduke on February 12, 1966; the other at the Werribee Sewage Farm from December 15, 1968 to March 2, 1969. One or two others have been seen in the Geelong area by other observers.

AUSTRALIAN (JAPANESE) SNIPE Gallinago hardwickii.
Moderately distributed in small numbers in the Geelong District where there are grassy freshwater ponds and marshes. Sometimes the species may be found at salt marshes. Werribee Sewage Farm, Reedy Lake, the southern shore of Lake Connewarre, Belmont Common swamps are but a few places where this Snipe can be found in spring and summer.

AUSTRALIAN PAINTED SNIPE Rostratula benghalensis.
The only records for the Geelong District, of which I am aware, are given in "The Birds of the District of Geelong, Australia"; by Charles F. Belcher. "There are two in the local museum which were shot near the Lakes in January, 1892, and I have seen other specimens from the same place in private collections."

ORIENTAL PRATINCOLE Glareola pratincola.
The only Victorian records are of six together, at the Werribee Sewage Farm during December 1962 and January 1963; and a lone bird at the same place on November 21 and 22, 1964.

AUSTRALIAN PRATINCOLE Stiltia isabella.
This bird is occasionally to be seen in spring and summer about the rock-studded flat shore at the west side of Lake Murdeduke: I have personally observed one and sometimes two there since 1966. The species has also been reported from the Werribee Sewage Farm.

RED-NECKED PHALAROPE Phalaropus lobatus.
The first Australian record, a bird in breeding plumage, was noted at the Werribee Sewage Farm on December 22, 1962. Another in non-breeding plumage was seen at the same place on December 27, 1966, and again a few days later.

WILSON'S PHALAROPE Steganopus tricolor.
One bird, in non-breeding plumage, was watched for over half an hour at Lake Murdeduke on February 6, 1966. This was the first reported Australian sighting of the species.

WADERS OF THE GEELONG DISTRICT (Cont'd.)

SOUTHERN STONE-CURLEW Burhinus magnirostris.
At the turn of the century apparently a not uncommon bird in the Geelong District. A few are still to be found in the area, mainly on the Bellarine Peninsula, the few still bushy places along Grubb Road and at the You Yangs. Recent breeding has been recorded in both places.

* * * *

LAMENT OF AN AMATEUR BIRD-WATCHER

Oonah McHaffie

Oh, for a bird of a brilliant hue,
With distinct markings to give me a clue;
Not just all-over grey like a thrush,
Nor one which darts away in a rush
Ere a chance occurs to adjust the glasses
For a much better look before it passes.

Oh, for a bird with a brighter dot
On forehead, or wing, or any spot;
None of your so-called 'faintly barred',
Which to find in the book is so very hard,
But one with its colour plainly defined,
To refer to the book its easy to find.

Oh, for a bird for a while to stay still,
To give me a chance to observe it till
I can note its colour, is it yellow or buff?
Till I can make my notes in the rough;
Not one of those birds which quickly fly;
I have lost it again and I heave a sigh.

Oh, for a bird that sits out on a limb,
Not near the trunk where the light is dim;
Not one that remains behind the cover
Of leafy shade till I discover,
And my feelings thus to harrow,
Because I'm looking at a sparrow.

* * * *

PORTLAND WEEK-END EXCURSION: OCTOBER 10TH, 11TH & 12TH, 1969

Jack Wheeler

Our annual spring week-end excursion was this year taken at Portland and the large number who attended is a true indication of the popularity of these trips. In all, 91 attended, 48 being accommodated at Bay View Lodge (bed and breakfast only), 32 at Portland Motel (bed, breakfast and dinner), whilst eleven made other arrangements by camping etc. Usually we like to have all in one establishment, as we had at Marysville last year, for this makes the atmosphere so much more homely; in this case at Portland, we just had to split up, but by the number of letters and 'phone calls of thanks, the arrangements of our Portland trip went off well and did not lack enthusiasm.

The organisers were very grateful to the Portland Field Naturalists Club for providing leaders for the main excursions on the Saturday and Sunday, and for arranging the screening by the Portland Camera Club of the history of Portland to a packed audience on the Saturday evening, following which was a welcome 'cuppa'.

The very good roll-up to the pre-breakfast jaunts was also very encouraging, and all those who made the effort of rising early agreed it was well worth while.

The masses of wildflowers seen in all areas visited was very rewarding, and Mr. Errey was kept busy with identifications and queries from young and old; the task of recording the botanical side of this excursion will not be an easy one, but as usual Mr. Errey's write-up makes very good reading.

The variety of birdlife was somewhat disappointing, and our birdlist not as comprehensive as one would anticipate. Perhaps there was more emphasis on hunting wildflowers than bird-watching, but this was quite understandable when such an array of flowers was there for all to see. Mr. Trevor Pescott has written up the birdlist for this issue of our 'Geelong Naturalist'.

Personnel:
Bay View Lodge - Tony Andrews, Miss M. Arthur, Peter Bartlett, Miss M. Brownhill, Mrs. E. Buchanan, Mrs. B. Campbell, Phillip Campbell, Dr. & Mrs. P.H. Daley, Helen Daley, Mrs. W. Trenchard-Davis, Mr. & Mrs. G.N. Earp, Susan Earp, Kathryn Earp, Martin Earp, Mr. & Mrs. E.G. Errey, Miss L. Hill, Mr. & Mrs. H.E. Jennings, Wayne Jennings,

PORTLAND WEEK-END EXCURSION (Cont'd.)

Wendy Jennings, Jenny Jennings, Barbara Jennings, Billy Jennings, Vicki Jennings, Raelene Jennings, Mr. & Mrs. R. Lavery, Mr. & Mrs. G. McCarthy, Glen McCarthy, Mrs. N. McNie, Peter McNie, Miss R. Marsh, Miss M. Martin, Mr. T.W. Pescott, Mrs. F. Singleton, Mrs. O.A. Usher, Mr. & Mrs. L. Vincent, Don Vincent, Ken Vincent, Kenneth Welsh, Mrs. Daisy Wood, Mr. & Mrs. J. Whitmore.

Portland Motel - Mr. O. Andrews, Mrs. R. Andrews, Mrs. J.C. Bailey, Miss L.A. Brock, Mr. & Mrs. A.T. Buzaid, Mr. & Mrs. L. Elms, Mr. Bob Fisher, Miss M.B. Freeman, Mr. G. Gayner, Mr. & Mrs. L. Gore, Mr. A.A. Grant, Mrs. M. Green, Miss J. Hoggart, Mrs. E. Holligan, Mr. R. Martin, Mr. G. Mathison, Miss L. Ramsay, Mrs. L. Rowe, Miss J. Small, Mr. & Mrs. C.H. Smith, Miss A. Webber, Mr. & Mrs. J.R. Wheeler, Mrs. Wilkinson, Mr. L. Wilkinson, Mr. K. Wells, Mrs. Ron Wood, Mr. Ian Woodland.

Camping and other arrangements - Miss J. Banks, Miss J. Falconer, Mr. & Mrs. J. Hunt, Miss E. Poole, Miss Francie Poole, Miss Florrie Poole, Mr. & Mrs. N. Povey, Mrs. B. Quirk, Mrs. E. Yeoman.

Itinerary:
Friday 10th (evening). Meeting of Portland Field Naturalist Club. Guest Speaker, Mr. Jack Wheeler (New Guinea and Hammersley Ranges). Followed by supper.
Saturday 11th 6.30a.m. Car trip to Cape Nelson Lighthouse and walk along Scenic Road.
9.30a.m. Excursion per car to Kentbruck Heathland and Lower Glenelg National Park - Leader: Mr. Fred Davies.
8.00p.m. 'History of Portland' presented by the Portland Camera Club - screening of 2 hours. Packed audience. Followed by 'cuppa' and biscuits. Vote of thanks by Mr. Owen Andrews.
Sunday 12th 6.30a.m. Car trip to Cape Grant Quarry and wander over excellent heathland. Good views of Gannet rookery Lawrence Rocks, and distant Lady Julia Percy Island.
9.00a.m. Excursion to Mt. Richmond National Park - Leader: Mr. Noel Learmonth, assisted by Mr. Fred Davies. Later visits to the Blow Holes and lunch at Bridgewater Bay, in excellent weather conditions. From here, members after thanking leaders, went their own way. Some visited Shelly Beach, Bat Ridges Reserve, and the Portland Museum.

My personal thanks to all Committee members who assisted with the arrangements for this successful excursion, and we now look forward to 1970 and further weekenders, now so popular for this growing Club.

HIKING OVER THE HEATHLAND

SOME PLANTS OF PORTLAND

Ted Errey

The general effect of our Portland weekend from a botanical point of view was almost overwhelming. At Marysville last October we found very interesting mountain forest flora, but rather regretted a lack of variety and colour. This year the Portland district provided both in abundance.

Naturally, sandy heathland is an ideal environment for low-growing plants that flower profusely at this time of the year. We had all heard beforehand of the delightful bush country of the south-west, but none of us were prepared for the masses of colourful plants of so many varieties, making the roadside right to the wheel tracks, (and often between them), brilliant with such an array of yellows, pinks, blues, mauves and white as could not be rivalled in any man-made garden.

Amongst all this breathtaking display, three plants were outstanding. First, there was the glorious pink boronia found in abundance on the heathland on Saturday morning when we were introduced to the new Kentbruck Settlement. Evidently, to some misguided eyes, a field of clover and ryegrass is a fairer sight. Judging by the glimpse we had of some of the cattle on the pastures already established in that area, they are still sadly short of nourishment in spite of all the chemical additives that have been used on the soil.

But surely this lovely flower should never have been belittled by the unimaginative name of Hairy Boronia! It brightened the landscape not only on the higher sandy country where we first found it, but also in the swampy tracts where sections of the road brought looks of concern to the faces of our drivers. And again on Sunday morning during our early walk close to the sea, there was the same delicate pink lighting up the low shrubby herbage of the foreshore.

The hairiness of this Boronia varies, as do the physical characteristics of so many plants. The stickiness of the Varnish Wattle, for example, is found only on the young spring growth; the spikiness of the Prickly Cryptandra is usually missing; and the Snowy Mint Bush lacks the typical foliage aroma of its fellow Prostantheras. In some cases, the characteristic was evidently

SOME PLANTS OF PORTLAND (Cont'd.)

present in the type specimen first collected. In this instance plants of this Boronia species from most parts of its range are noticeably hairy. In the Portland district that is not so. A lens of ten magnifications showed the leaves to be quite smooth.

On a larger scale came the magnificent display of Grass-tree flowers as we took the new cross-country road from Mount Richmond to Cape Bridgewater. Over many acres the spikes reached up to eight feet or more, so numerous that in places we could not walk between them. Those members without cameras had more time than the rest to gaze in wonder and admiration. The photographers were quickly at work securing pictures of the overall effect, then of some of the wierdly contorted stems, and finally close-up views to preserve the detail of the flowers opening first on the northern side of the stem and gradually encircling the whole spike, each of which must carry thousands of individual flowers.

So fascinated were we that it was some time before the more observant found there were plants lesser in size but not in beauty among the Grass-trees, and several orchids were entered on our lists.

The third plant of more than usual interest was the Blue Tinsel Lily, so well named from the metallic lustre of its stiff petals. In Western Australia, where it is known as the Star of Bethlehem, it is fairly widespread in the south-western province.

In this state its main habitat is in the Grampians. Outside those ranges, scattered patches are found only in the Portland district and the Little Desert. Unfortunately the plant is not easy to propagate, nor is its rich purple-blue colouring easy to capture on film.

This is but one more instance of the urgent need to reserve for all time such localities where beautiful, unusual, and all too frequently, rare species of our flora and fauna exist. The actions of the authorities and individuals responsible for the gradual frittering away of these areas will be regarded by posterity not merely as senseless vandalism but as criminal neglect of public property.

Our first botanical studies for the weekend began before breakfast on Saturday, when President Jack Wheeler, energetic as ever, led us on a drive to Cape Nelson. The Drooping Velvet-bush soon caught the eye, for it grew there in abundance and the creamy flowers hanging

SOME PLANTS OF PORTLAND (Cont'd.)

in sprays beneath the woolly heart-shaped leaves were very attractive. This is a South Australian plant, encroaching into Victoria only as far as the Portland district.

Before we had reached our stop, a low eucalypt heavily in flower attracted attention. It was the Soap, or White Mallee, another South Australian plant extending to Portland. It is a coastal species, found on Kangaroo Island and the South Australian peninsulas. Naturally honey-eaters were busy among the dense white blossom. The seed capsules of this small tree are relatively large, measuring half an inch in diameter. Some were collected, so the tree should be gracing several Geelong gardens in a few years' time, thereby adding to the nectar supplies of our local honey-eaters.

Milkmaids and Guinea-flowers were conspicuous in ground displays, while the Small-leafed Clematis and the blue Love Creeper spread their colour among and over other plants. Not so popular was the Tangled Dodder-laurel that not only tangles one's feet but can strangle other plants with its tightly twining parasitic stems.

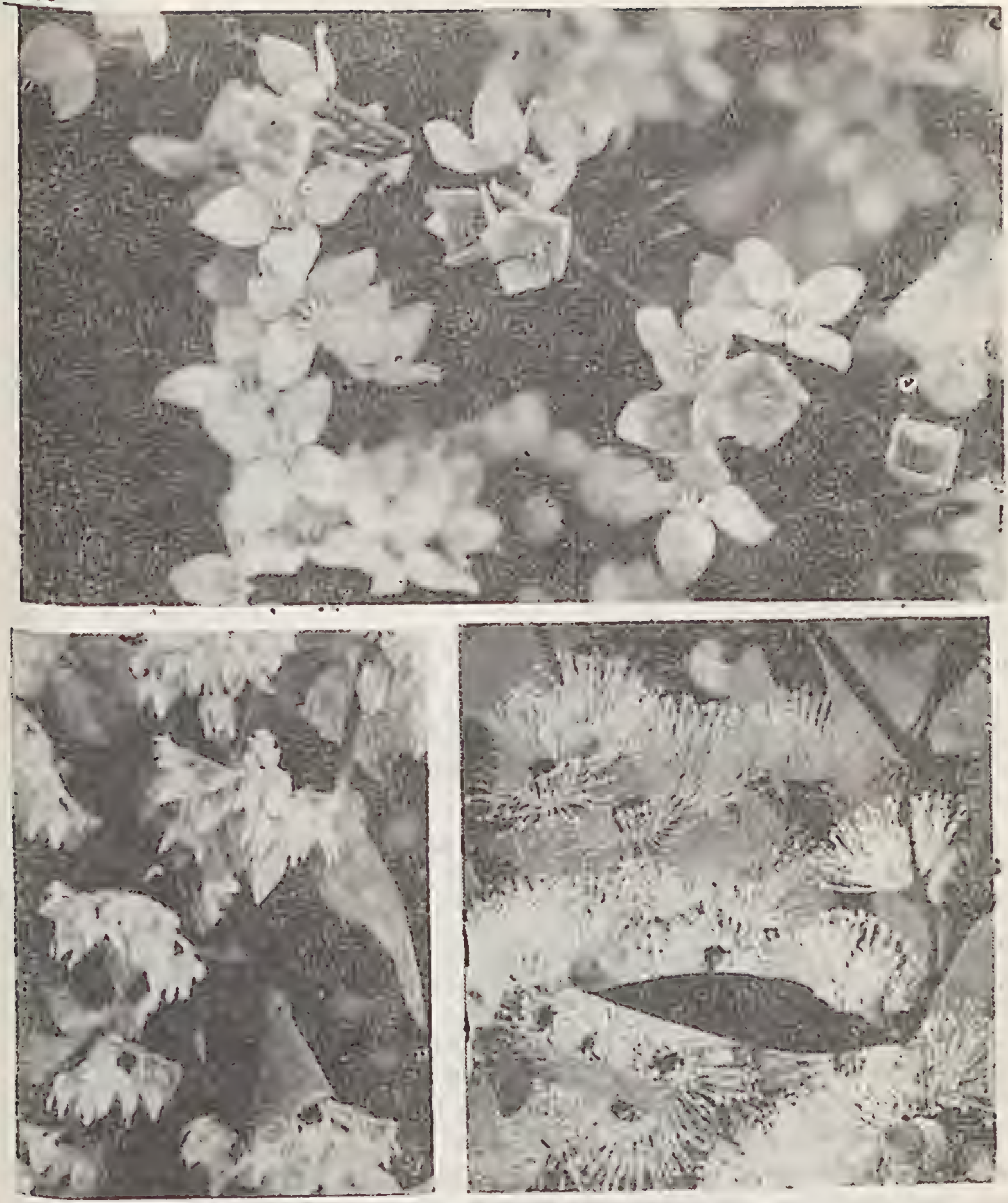
Green tubes of Correas were much in evidence and a few pink forms were also found. The Silky Tea-tree too, was flowering well, some plants showing the delicate pink shades often found with this species.

Here, as at most localities we visited, the Common Heath was at its best. White and red and all shades of pink in between blended with the general display.

Flame Heath and Cranberry Heath were both there, the former bright with its red tubular flowers, the latter almost finished flowering, but plenty of green berries were hiding under the stems. Several members tasted these, with no noticeable ill effects. Two Beard Heaths, the Common and the Coast species, were both in flower.

Closer to the ground were the Trailing Goodenias with flowers like bright yellow violas. Tiny Fan-flowers were there, and Violets, all pale mauve instead of the more usual purple and white. The rich blue of Tall Lobelias provided another bright spot, and the Running Postman dipped its "globules of blood among the grass's tips" wherever the taller plants gave it space.

Other pod-bearers made up a considerable proportion of the vegetation. The Coast and Myrtle Wattles had almost ended their



Hairy Boronia
White Mallee
Drooping Velvet Bush

Photos. by Trevor Pescott.

SOME PLANTS OF PORTLAND (Cont'd.)

display, but Bush Peas were in full colour. Unfortunately so many of these were new to us that without a local botanist to help, we did not try to identify the various species in the limited time available. Eight species of Bush Peas and four of Parrot Peas are listed for the Lower Glenelg National Park.

Two plants that can be included, however, are the Austral Indigo found near the Mount Richmond Lookout on Sunday morning, and the Hop Bitter Pea growing close to our lunch stop on Saturday.

The Austral Indigo is normally a straggly shrub, growing as it was there, among taller plants. The flower sprays are somewhat similar to those of the Purple Coral-pea or Sarsaparilla as it is often called. The Bitter-pea, growing in more open positions, reached six feet or more in height. A number of long branching stems from ground level formed a shapely thicket, with many yellow pea-shaped flowers. The leaves were tough and leathery, much larger than those of our other leguminous natives, and they had a very definite - and lasting - bitter taste.

The swampy section of the heathland was the home of other gems. A second boronia, evidently the Swamp Boronia, lower, trailing and less floriferous than its relative, but with flowers of the same soft pink, mingled with the taller species right to the wheel tracks. A white form of the Hairy Boronia was also found in the area.

Two more heaths, Sprengelia or Swamp Heath, so luxurious in the Grampians, and the Woolly-styled Heath, the flowers of which we had to disect before it was identified, grew there close by the road.

Mention must be made of the Melaleucas along Heath Road, especially as a most unusual hybrid is found there. An extensive belt of Mealy Honey-myrtle provides a striking mass display of purple, and in the wetter sections the yellow botttle-brushes of the Scented Paperbarks perfume the air. These two have produced a hybrid, of which only an odd plant or two are in existence. Flowers of these are an uncommon pink shade.

Orchids we found in most localities, the best finds being on our two pre-breakfast expeditions in the open heathland by the sea.

At Cape Nelson on Saturday the Bearded Greenhood was found:

SOME PLANTS OF PORTLAND (Cont'd.)

Leopard Orchids were common and so were Pink Fairies. But the most exciting find in that spot was a cluster of Daddy-long-legs, a particularly spidery-looking Spider Orchid.

On Sunday, Battery Point foreshore produced more Bearded Greenhoods, as well as Rabbit-ears and Purple Waxlips. There, too, we found fine patches of Scented Candles, and the expanding hearts of young Grass-trees revealed fascinating patterns.

Among the tall Grass-trees near Mount Richmond colonies of Hare Orchids grew, and Red-beaks were in flower where fire had swept through last summer.

The week-end left me with the feeling that if spring would but stand still while I spent a month sauntering across the heathland with lens and camera, plant list and text book, I would begin to know something of the Portland bush.

Common and Botanical Names of the Plants Discussed (in the same order as in the article).

Hairy Boronia	Boronia pilosa
Varnish Wattle	Acacia verniciflua
Prickly Cryptandra	Cryptandra tomentosa
Snowy Mint Bush	Prostanthera nivea
Austral Grass-tree	Xanthorrhoea australis
Blue Tinsel Lily	Calectasia cyanea
Drooping Velvet-bush	Lasiopetalum schulzenii
Soap Mallee (White Mallee)	Eucalyptus diversifolia
Milkmaids	Burchardia umbellata
Guinea-flowers	Hibbertia species
Small-leafed Clematis	Clematis microphylla
Love Creeper	Comesperma volubile
Tangled Dodder-laurel	Cassytha glabella
Correa	Correa reflexa
Silky Tea-tree	Leptospermum myrsinoides
Common Heath	Epacris impressa
Flame Heath	Astroloma conostephioides
Cranberry Heath	Styphelia humifusa (Astroloma humifusum)
Common Beard-heath	Leucopogon virgatus
Coast Beard-heath	" parviflorus
Trailing Goodenia	Goodenia lanata

SOME PLANTS OF PORTLAND (Cont'd.)

Fan-flowers	Scaevola species
Violets	Viola hederacea
Tall Lobelia	Lobelia gibbosa
Running Postman	Kennedya prostrata
Coast Wattle	Acacia sophorae
Myrtle Wattle	" myrtifolia
Bush Peas	Pultenea species
Parrot Peas	Dillwynia species
Austral Indigo	Indigofera australis
Hop Bitter Pea	Daviesia latifolia
Purple Coral Pea	Hardenbergia violacea
Swamp Boronia	Boronia parviflora
Swamp Heath	Sprengelia incarnata
Woolly-styled Heath	Epacris lanuginosa
Mealy Honey-myrtle	Melaleuca squamea
Scented Paper-bark	" squarrosa
Bearded Greenhood	Pterostylis barbata
Leopard Orchid	Diuris maculata
Pink Fairies	Caladenia latifolia
Daddy-long-legs	" filamentosa
Rabbit-ears	Thelymitra antennifera
Purple Waxlip	Glossodia major
Scented Candles	Stackhousia monogyna
Hare Orchid	Caladenia menziesii
Red-beaks	Lyperanthus nigricans

* * * * *

Subscriptions are now well overdue, and any still outstanding should be forwarded without delay to -

Hon. Treasurer,
Mr. E.G. Errey,
3 Leonard Street,
Belmont, 3216.

* * * * *

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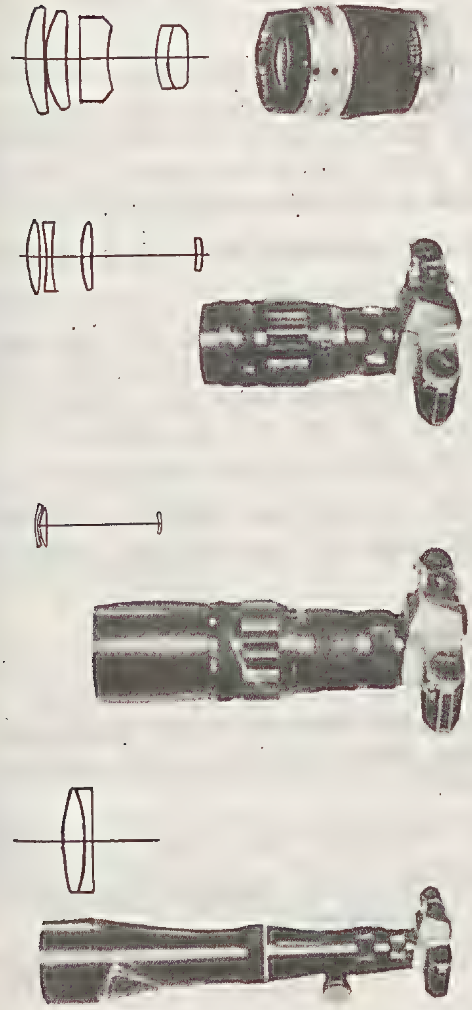

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BIRDS AT PORTLAND

Trevor Pescott

(Compiled from lists by Jack Wheeler, Geoff Gayner and Trevor Pescott - October 11th and 12th, 1969.)

Introduction: During the weekend of the Club's Portland visit, we were able to sample three main habitat types, notably the ocean coasts, heathland and adjacent forest particularly at Kentbruck and Mt. Richmond, and the open grassland with scattered swamps, marshes and waterholes; all areas visited were quite close to Portland.

Comments on the flora of these areas are recorded elsewhere in this issue of "Geelong Naturalist".

Because of the rather tight itinerary, no great amount of time was given to detailed bird observing, but 83 species of birds were seen in the course of two days. Most of the species seen are birds found around Geelong, with the exception of the Emu which has become extinct in our district, and the Black-winged currawong.

Other interesting observations were the Gannets on Lawrence Rocks, the large number of Little wattlebirds seen at Cape Nelson, and the sighting of a Southern skua.

Species seen: The following bird species were listed -

Emu (Dromaius novae-hollandiae) Apart from the family of chicks killed on the road near the Inkpot, and the one survivor featured in the photograph, another chick in the same vicinity, and adults were seen at Mt. Richmond National Park.

Common bronzewing (Phaps chalcoptera) Two were seen near Cape Nelson.

Short-tailed shearwater (Puffinus tenuirostris) Several hundreds offshore from the Blowholes and fewer elsewhere.

Albatross species One bird seen, but it was too far offshore for positive identification.

Black cormarant (Phalacrocorax carbo) One at the Blowhole.

Black-faced cormarant (Phalacrocorax fuscescens) Several perched on rocks off Dutton beach.

Australian gannet (Sula serrator) A few were seen flying offshore. It was possible to see the nesting colony of gannets on Lawrence

BIRDS AT PORTLAND (Cont'd.)

Rocks, and although they appeared just as a white smudge, there are in fact several hundred pairs, nesting in a closely-knit group.

Crested tern (Sterna bergii) Two at Bridgewater Bay.

Silver gull (Larus novae-hollandiae) Common near the coast.

Southern skua (Catharacta skua lonnbergi) One close inshore at Cape Grant.

Spur-winged plover (Lobibyx novae-hollandiae) Common throughout.

White ibis (Threskiornis molucca) A few seen around swampy areas.

Straw-necked ibis (Threskiornis spinicollis) Several seen.

White-faced heron (Ardea novae-hollandiae) Quite common.

White egret (Egretta alba) One at Nelson, fishing in the shallows of the river.

Royal spoonbill (Phatalea regia) One feeding in a swamp on the outskirts of Portland.

Eastern swamphen (Porphyrio melanotus) Several noted at a swamp just out of town.

Black swan (Cygnus atratus) A few seen on the local swamps; one family of cygnets was seen.

Black duck (Anus superciliosa) Three at Cape Grant.

Musk duck (Bizura lobata) Several on a swamp near Nelson.

Swamp harrier (Circus approximans) A few only were seen.

Wedge-tailed eagle (Aquila audax) Several birds seen at Mt. Richmond and over the Kentbruck forest.

Brown goshawk (Accipiter fasciatus) One noted in the timbered area close to Mt. Richmond.

Whistling eagle(kite) (Haliastur sphenurus) One over Mt. Richmond.

Brown hawk (Falco berigora) Several seen on the margins of Mt. Richmond.

Nankeen kestrel (Falco cenchroides) Several close to Portland.

BIRDS AT PORTLAND (Cont'd.)

Yellow-tailed black-cockatoo (Calyptorhynchus funcreus) Occasionally seen, particularly in the vicinity of pine plantations where they feed on the pine-cones.

Gang-gang cockatoo (Callocephalon fimbriatum) Several seen in the bushland areas, feeding on the seeds of eucalypt species.

White cockatoo (Kakatoe galerita) Quite common.

Galah (Kakatoe roseicapilla) Several recorded.

Crimson rosella (Platycercus elegans) Common in the forested areas.

Blue-winged parrot (Neophema chrysostoma) Common in the areas near Nelson.

Kookaburra (Dacelo gigas) Frequently seen. One bird observed to be carrying a small bird in its beak, presumably as food.

Pallid cuckoo (Cuculus pallidus) Calling in several localities.

Fan-tailed cuckoo (Cacomantis pyrrhophanus) Two seen and heard at Bats Ridges.

Horsfield bronze-cuckoo (Chalcites basalis) Heard and seen at Kentbruck.

Golden bronze-cuckoo (Chalcites plagosus) Heard calling at Kentbruck.

Fairy martin (Hylochelidon ariel) Several nesting colonies at road-culverts under the Princes Highway near Portland

Welcome swallow (Hirundo neoxena) Common in most areas visited and around the town.

Grey fantail ((Rhipidura fuliginosa) Seen in all timbered areas; common.

Willy wagtail (Rhipidura leucophrys) Several seen near farms.

Yellow robin (Eopsaltria australis) Quite common at Kentbruck and Mt. Richmond.

Scarlet robin (Petroica multicolor) One pair only seen, that being at Mt. Richmond.

Grey thrush (Colluricincla harmonica) Common, particularly in the timbered country.

Emu Chick

Mrs. L. Rowe with "Julia"

Photos. by Trevor Pescott

BIRDS AT PORTLAND (Cont'd.)

Mudlark (Grallina cyanoleuca) Common in the open land particularly where there were dams or waterholes.

Black-faced cuckoo-shrike (Coracina novae-hollandiae) Several seen at Kentbruck and Mt. Richmond.

Blackbird (Turdus merula) Common around the town and in the adjacent coastal areas.

White-fronted chat (Epthianura albifrons) Small groups recorded at Kentbruck and Cape Nelson.

Striated thornbill (Acanthiza lineata) A small flock seen near Moleside.

Brown thornbill (Acanthiza pusilla) In bushland areas generally, several birds seen.

Yellow-tailed thornbill (Acanthiza chrysorrhoa) Frequently seen in most areas visited.

Striated field-wren (Calamanthus fuliginosus) A few only were seen, these being at Kentbruck and near Nelson.

Little grassbird (Megalurus gramineus) Heard calling in rushes beside a swamp near Nelson.

Rufous bristlebird (Dasyornis broadbenti) Although one bird was flushed from scrub near Bridgewater, none were calling; however near Nelson, several birds were heard on a few occasions.

Golden-headed fantailed-warbler (Cisticola exilis) In rushes and rank grass in swampy country near Nelson.

Southern emu-wren (Stipiturus malachurus) Several calling in heathy country near Kentbruck; one bird seen.

Blue wren (Malurus cyaneus) Common throughout the district.

White-winged triller (Lalage suerii) One male bird noted at Mt. Richmond National Park.

Dusky wood-swallow (Artamus cyanopterus) Recorded from Kentbruck and Mt. Richmond.

White-browed scrub-wren (Serecornis frontalis) A few only were seen in rank growth near the swamp at Nelson.

BIRDS AT PORTLAND (Cont'd.)

White-throated tree-creeper (Climacteris leucophaca) Several seen at Kentbruck and Mt. Richmond.

Orange-winged sittella (Neositta chrysoptera) A small flock seen in the Kentbruck forest.

Spotted pardalote (Pardalotus punctatus) Heard calling at Kentbruck.

Eastern striated pardalote (Pardalotus ornatus) Noted in several of the bushland areas visited.

Silvereye (Zosterops lateralis) Very common particularly in the coastal scrubs and heaths.

Brown-headed honeyeater (Melithreptus brevirostris) Several at Kentbruck.

Singing honeyeater (Meliphaga virescens) A few seen in the coastal areas notably Bridgewater.

White-eared honeyeater (Meliphaga leucotis) Common in the bushland and heaths.

Crescent honeyeater (Phylidonyris pyrrhoptera) A few only were seen at Kentbruck.

Yellow-faced honeyeater (Meliphaga chrysops) Heard and seen along the river at Moleside.

Yellow-winged honeyeater (Meliornis novae-hollandiae) A very common bird in most areas, particularly at Cape Nelson.

Little wattlebird (Anthrochaera chrysoptera) Large numbers seen feeding in the flowering mallee gums at Cape Nelson.

Pipit (Anthus australis) Several seen in the heathlands and open country.

Skylark (Alanda arvensis) Common, particularly in the coastal grasslands at Bridgewater.

Greenfinch ((Chloris chloris) Common at township.

Goldfinch (Carduelis carduelis) Common in open areas and around Portland.

House sparrow (Passer domesticus) Very common.

Starling (Sturnus vulgarus) Very common, nesting at the Motel.

BIRDS AT PORTLAND (Cont'd.)

Raven (Corvus coronoides) Common throughout the district.

Pied currawong (Strepera graculina) Quite common in the bushland at Kentbruck.

Black-winged currawong (Strepera melanoptera) Several seen in the coastal areas and at Gorae West.

White-backed magpie (Gymnorhina hypoleuca) Common, many young birds seen.

* * * * *

SEABIRDS AND WATER

"The albatross and other tube nosed birds drink sea-water with impunity because their nostrils contain special glands which extract from the blood all superfluous salts and let them drip away in mucus to the outside world."

In an article by Lorus and Margery Milne - "Animals" Magazine
Vol.4 page 524.

* * * * *

PHOTOGRAPHS WANTED

Black-and-white photographs, printed on glossy paper, are needed for use in future issues of 'Geelong Naturalist'. Any subject of natural history interest will be of use, and it is hoped to keep a wide variety of prints available to supplement articles submitted without illustration.

Please contact Hon.Editor,
Trevor Pescott,
4 Victoria Terrace,
Belmont, 3216.

AT RANDOM

FINDING A STRANGE HARE - by Ted Errey.

Amongst a list of about twenty orchids found in a small section of bushland in the Bellbrae district during October, five Caladenias were included. Most numerous were the Hare Orchids, Caladenia menziesii, found in colonies that must often have numbered hundreds.

The area was one that had been swept by fire last summer, which would account for the number of flowers of this species and also of Red Beaks, Lyperanthus nigricans.

Of special interest was a small colony of several dozen Hare Orchids with flowers different from the normal type. They were first found and brought to my notice by Mrs. H. Kroger, of Belmont, whose family has done some enthusiastic orchid hunting in the Anglesea district this spring.

The variation was not only one of colour, which is not unusual among some orchid species. In this small colony every flower varied from normal in the shape and size of the dorsal sepal. In the Hare Orchid, this forms a small hood over the column, between the erect lateral petals, which are the hare's "ears".

With the freak specimens, however, the flowers extended their hoods till in some cases they stood up almost like a third ear in between the other two. The taller the hood, the more slender was its form. Many were growing distortedly sideways, some even leaning across one of the ears.

Specimens were shown to Mr. Jim Willis and Mr. Ted Rotherham, two of the authors of the recently published book "Flowers and Plants of Victoria", during their recent visit to Anglesea. Neither had previously seen such freakish variations in the species.

THE TREES OF MUIR WOODS

H.A. & M. Boardman

We have always been interested in the Redwoods of California, and last May we spent two days at San Francisco to give us the opportunity of seeing the trees in Muir Woods.

This is a National Monument, established in 1908, and has an area of 500 acres. It is 17 miles north of San Francisco and is a wonderful example of the foresight of one man, William Kent who purchased the last virgin stand of redwoods near San Francisco and gave it to the Government for all to enjoy, and named it "Muir Woods" in honour of John Muir, a noted wirter and naturalist who lived from 1838 until 1914.

Redwood were once scattered all over the world, but could not survive the glacial ice of the ice age. Today the only place in the world that redwoods grow naturally is in a narrow belt 30 miles wide and 540 miles long, along the Pacific Coast from Monterey to the south west corner of Oregon. In Northern California, two redwoods are 367 feet, but in Muir Woods some reach 240 feet, so, though beautifully straight, and very tall, are not to be compared in height to the others.

In the redwood forest, family circles are formed by redwood trees maturing from root sprouts and are quite common in the forests. 98% of natural reproduction is from sprouting, only about 2% start from seeds. They are very fire resistant as they have a large amount of water in their wood, almost no inflammable pitch and a very thick asbestos-like bark. The moist ground where they usually grow also reduces the possibility of fire.

Insects and fungi do not injure many trees because of certain chemicals in the bark and wood. The result of the deep shade and few insects is that there are less birds and animals, the latter because of few light-loving plants. There are lovely ferns such as sword-ferns, lady ferns and even bracken.

The giant salamander and the mole and black-tailed deer are found, and the winter wren can be seen occasionally.

In the wood was a cut section of redwood, 1021 years old, 6 feet in diameter. Another one 20 feet in diameter was only 1000 years old, so growth depends on temperature, moisture, sunlight and competition from other plants.

(Footnote - figures quoted are from U.S. Dept. of Interior information)

JUNIOR PAGES

In the last issue of "Geelong Naturalist", four photographs were printed and Juniors were asked if they could identify the subjects in the photographs; this was not very easy, for they were as follows: top left - Spider orchids, top right - Goshawk, lower left - Grasstrees, lower right - Huntsman spider.

Let us look more closely, not at the photographs, but at the subjects shown, for each one is found locally, and should be familiar to you.

Spider Orchids: These little plants are quite common in our bushland areas, particularly at Anglesea and Steiglitz; we even found a few at Batesford on our excursion there last month.

They grow from a bulb or tuber which stays in the ground, sending up a leaf shoot and a flower shoot at the time of the year most suited to them - this is usually in the spring time.

The flowers, although quite small, are very colourful and the strange shapes of the different types of Spider orchid make them most interesting.

Those in the photograph are known as "Fringed Spider-orchids" or as "Green-combed Spider-orchids", because of the green, fringed edge to the tongue.

They are called Spider-orchids because their long sepals look rather like spider legs.

Brown Goshawk: One of several common species of hawks found around Geelong, the Goshawk is found in bushland rather than the open farm lands. The You Yangs is an excellent place to search for the Goshawk, for many pairs are found to nest there; they are quite plentiful at Anglesea, too, and at Anakie and the bushland near Ocean Grove.

The Goshawk builds a solid nest of sticks, often quite high in the fork of a gum tree, and it uses fresh gum leaves as the lining; there are up to 5 eggs laid, these being white.

Young Goshawks are covered with thick, creamy-grey down to keep them warm, and their parents feed them on rabbits, birds and other small animals.

Goshawks will attack anyone who interferes with their nest, and there is at least one bird photographer who had his camera broken when it was struck by a Goshawk defending its nest.

Grasstrees: These are also known as Kangaroo-tails because of the long flower-spike, or Blackboys because their trunks are quite black, particularly if they have been in a bush fire some years before.

They flower much better after a bush fire than otherwise, but the ones in the photograph at Ocean Grove have never been burnt; so their dry leaves hang down to completely cover the trunk.

The long flower-spike will grow many feet tall and contains thousands of separate flowers; one botanist has told us that a spike 10 feet tall would have about 5,000 flowers!

In the trunks of the Grasstree is a large amount of sticky resin, and this comes out if the plant is burnt; in some places, Grasstrees are cut down and burnt just to obtain this resin, which is then used in certain kinds of paint.

Huntsman Spider: This large spider gets its name because it does not spin a web to trap insects, but hunts them from under loose bark and amongst rocks.

Other names used for the spider are Tarantula or Triantelope, but both of these are wrong; the real Tarantula is found in the tropical jungles of islands in the Pacific and other Oceans. It is a very poisonous spider.

Our Huntsman is completely harmless to human beings, and even if it does bite, it will not harm us.

The one in the photograph has its legs around an egg-sac; this is like a cocoon, made of closely spun web-silk, and in it are laid about 50 or more eggs.

These hatch out as little spiders just like the adults, but of course, much smaller; once out of the egg-sac, they can look after themselves without help from the parents.

* * * *

OFFICE-BEARERS 1969-70

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(Phone: 43.5316)

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Hon. Treasurer:
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(Phone: 43.2848)

Hon. Editor:
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Mr. O. Andrews, 18 Margaret Street, North Geelong. 3215.
(Phone: 7.2759)
Mrs. B. Quirk, 36 Fairview Avenue, Newtown. 3220.
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Published by
THE GEELONG FIELD NATURALISTS CLUB
Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in the month, at
8 p.m. in the McPhillimy Hall, St. George's Church,
Latrobe Terrace, Geelong

Visitors Welcome

All papers submitted for publication in this journal should be sent to the Hon. Editor

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CG

VOL. 6 NO. 4 FEBRUARY 1970 Price: 25c

GEELONG NATURALIST

Journal of the Geelong Field Naturalists Club

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Hon. Editor: Trevor Pescott

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

MEMBERSHIP

Membership of the G.F.N.C. is open to any person interested in Natural History. The 'Geelong Naturalist' is distributed free to all members, and the Club's reference and lending library is available.

Subscription Rates are:
(Due on 1st April)

	Per Annum.
Adult Membership	$2.00
Joint Membership	$3.00
Junior Membership	50¢
Subscription to Magazine	$1.00

COVER PHOTOGRAPH:

Crested Terns
By Trevor Pescott

GEELONG NATURALIST

Vol.6. No.4. February, 1970.

EDITORIAL

The Otway Ranges is generally accepted as including all the densely wooded area from near Lorne to Horden Vale; but the precise boundaries of the Otways seem rather indefinite, and could well include all the bushland and elevated country from Torquay to near Warrnambool, from the basalt plains south of Colac and Camperdown to the coast.

If we do include all this area in the Otways, as we probably should, then there is nearly 900,000 acres, or 1500 square miles, involved.

Within this area, we have only several small forest reserves and the coastal National Park near Port Campbell - a few thousand acres at most, consisting perhaps 0.3 per cent of the total.

Because of this lack of permanent reserves in the Otways, it is excellent news indeed to hear that the Anglesea-Airey's Inlet Society (Angair) has taken the initiative, and approached the State Government with a recommendation that a large Park be established between, and north of, these two towns.

Our worry now, of course, is what attitude will be taken by our State Government in respect of such an ambitious request - only time will tell!

It should be a basic aim of this Club, and of each of its members, to work towards having a far greater proportion of the Otways reserved - not only as National Parks, but in the various types of Reserves best suited to preserve the flora and the fauna in each of the various habitats concerned.

There are many types of forest land still in the Otways, and there are some land tracts still virtually unscarred; one such area, that between the Kaangalang and Thompson Tracks, east of Forrest, would make an excellent Wildlife Reserve.

TREVOR PESCOTT,

Hon. Editor.

NOTES FROM "THE GEELONG NATURALIST" PUBLISHED BETWEEN 1902 AND 1913

By Trevor Pescott

Some time ago, I was loaned some issues of "The Geelong Naturalist" from Mr. W. Renton of Newtown; the following are just a few notes of particular interest, to which I have appended comments applicable today, about 60 years after the original observations were recorded.

Vol.5. No.4. Dec. 1902.
"Another significant alteration to the (Game) Act concerns imported birds. Formerly all birds not indigenous to Australia, except Sparrows and (Indian) Mynas, were protected throughout the year. For the future only the English Thrush and Skylark and the Java dove, are to enjoy this immunity."

> Apparently until 1902, even the Blackbird and Starling were protected; both birds are now serious pests. One wonders if all these species had not been introduced, would the native species have thrived - we will never know!

Second Series; Vol.1. No.3. Sept. 1903.
Page 51. (At the You Yangs) - "Now that the timber has been given a chance to grow, the reserve at the You Yangs is becoming very rich in bird life, as was once no doubt the whole of our district. On a recent visit (Aug. 21st.) we noticed .... Temporal Pomatostomus .... breeding".

> The Pomatostomus or Babbler is now probably extinct throughout Geelong, once being common; the last nest was possibly one I found on Wooloomanata in 1954.

Second Series; Vol.2. No.3. March 1906.
Page 152. Club outing to Dog Rocks on 13.11.05.
"Botany - plants in bloom

Ranunculus lappaceus
Hibbertia stricta
Drosera auriculata
Hymenanthera Banksii
Viola hederacca
Viola betonicifolia
Comesperma calymega
Hypericum japonicum
Stackhousia linarifolia
Oxalis corniculatum
Geranium pilosum
Erodium cygnorum
Pultenaea stricta
Dilwynnia cricifolia
Bossiaea prostrata
Kennedya prostrata
Glycine latrobeana
Pimelea humilis

NOTES FROM "THE GEELONG NATURALIST" (Cont'd.)

Acaena ovina
Acaena sanguisorbae
Tillaea verticillaris
Tillaea imexantha
Leptosperm lanigerum
Epilobium glabellum
Haloragis fetragyna
Daucus brachiatus
Brachycome diversifolia
Leptorrhynchos squamatus
Stuartina Muelleri
Erechfites quadridentata
Lobelia prafioides
Brunonia australis
Solanum nigrum
Convolvolus erubescens
Cynoglossum suaveoleus
Prostanthera nivea
Veronica gracilis
Diuris longifolia
Caledenia carnea
Glossodia major
Hypoxis glabella
Wurmbea divica
Burchardia umbellatum
Bulbine bulbosa
Chamaescilla corymbosa
Arthropodium strictum
Arthropodium pauiculatum
Luzula campestris
Juncus communis
Anthristina ciliata
Stipa aristiglumis
Agrostis solandri
Poa caespitosa
Danthonia pencillata
Cymbonatus lawsoniarius
Helipterum dimorpholepis
Gnaphalium japonicum
Craspedia Richea
Wahlembergia gracilis

Three species of ferns were also recorded. Of mosses 8 species and of Hepatics one were collected."

For a comparison, see the G.F.N.C. publication titled An Introduction to Batesford Sanctuary "Lilydale House" (June 1967).

"Mr. A.B.F. Wilson obtained several species of lizards and also the pretty two-hooded snake Furina bicucullata."

This may have been the Common Brown Snake formerly known as Furina textilis; the juvenile with several dark bands across its head and neck may have mistakenly been called a separate species. Failing this, I can not find any reference to the species mentioned, although the genus was formerly accepted for several species.

"The most important find of the day, however, was an old aboriginal workshop ....

"This outcrop (of Gabro) was first discovered by Mr. A.B.F. Wilson. The only other outcrops to be found in the district are at

NOTES FROM "THE GEELONG NATURALIST" (Cont'd.)

Bannockburn and Ceres."

> The value of this stone is indicated by the following extract from "Men of Yesterday" by Magaret Kiddle (Melb. Uni. Press 1961. Page 8) "There were at least eight tribes in the Western District which roamed their own territories unless summoned by message stick or smoke signal to attend one of the inter-tribal gatherings. These were held in the summer. One meeting place of the inland tribes was at the large marsh Mirraewuae, celebrated for emus and other game, almost within sight of Mount Rouse; another was at Mount Noorat. At both there were hunting, feasting and tribal dances, or corroborees. There was also barter, or the ceremonial exchange of goods. The tribes found it necessary to supplement their local resources with those from other districts. Some parts of the country produced special materials coveted by tribes which lived elsewhere. Obsidian, or volcanic glass, used for scraping and polishing weapons was found in the region of Dunkeld; forest kangaroos, from whose skins the finest rugs were made, lived chiefly around Mount Noorat. From the Geelong district came the best stone for making axes, and a kind of wattle gum celebrated for its adhesiveness. Sea shells, red clay, special woods for spear-making, stones for axes, gum to fix axe-handles - these and other materials were exchanged.."

Second Series; Vol.2. No.4. June 1906.
Page 194 - report of an excursion to Paper Mills area, when 130 plant species were found.

Second Series; Vol.3. No.3. April 1907.
Page 50. Mud Island by A.G. Campbell, Melbourne.
"The laying season (of Storm Petrels) is from middle to end of November." And the plants - "On the south-western edge of the Island, where the sea sand drifts up with every gale, will be found Calocephalus brownii, Scirpus nodosus, Poa billardieri and Distichlis maritima, with solitary plants of Capile maritima. On the north

NOTES FROM "THE GEELONG NATURALIST" (Cont'd.)

western edge where the sand has blown into a hummock perhaps ten feet high is a clump of Myoporum insulare, Acacia longifolia, Aster axillaris and some magnificent large and rounded shrubs of Styphelia richei.

On the protected and older sandbanks, where the Storm petrels nest, are fields of Tetragonia implexicoma crawling over the sand, or brakes of Antriplex cinereum standing five feet high. Scattered about are tussocks of grass, and rambling bushes of Atriplex palludosum and Phagodia billardieri and Cheropodivae sp. The introduced plants, Carduus lanceolatus, Urtica urens and Anologis arvensis will also be seen.

"It has been said that Mud Island is one of the oldest parts of Port Phillip, in fact that before the Sorrento dunes and peninsular were formed, Mud Island existed."

(These notes referred to a trip to Mud Island 28/12/1906)

> Much of the vegetation has altered in the last 63 years, with some species including Ac. longifolia being lost.
> Regarding the age of the Islands - recent investigations suggest that the formation is new, being only about 3,500 years.

* * * * *

OTWAYS SURVEY STARTED

By Trevor Pescott

A Survey to attempt to find out a great deal more about the Otway Ranges was launched at a weekend camp at the Parker River last December.

It is hoped to carry out camps each second month, the next being this month (February) and following that, one at Easter.

Both of these camps will be along the Parker River.

A full report of these camps will be published in "Geelong Naturalist" later this year.

Wilsons Promontory Party 1905

Photo by Mr. Macy.

WILSON'S PROMONTORY

By Mrs. V. McHaffie

Members may be interested in this photograph taken at the time of the Field Naturalists' Club excursion to Wilson's Promontory in 1905.

In view of all the controversy in recent years as to whether there should be a licenced Motel and whether there should be more facilities for tourists and subsequently more and more traffic, which without doubt will be detrimental to the fauna in the area, it is interesting to note the way the party reached the locality almost sixty-four years ago.

An article in "The Victorian Naturalist" Vol.XXll No.12, April, 1906, reporting on the excursion, gives a very detailed description of the Promontory at that time and discusses suggestions and plans for its preservation. After the first few pages, which are under the heading "General", sections are devoted to "General Zoology (except Mollusca)" by J.A. Kershaw, F.E.S., which includes a section "Birds" by Mrs. Hardy, "Conchology" by G.B. Pritchard, F.G.S., "Botany" by A.D. Hardy, F.L.S., "Geological Notes" by G.B. Pritchard, F.G.S., "Ethnology" by A.S. Kenyon, C.E.

Perhaps if I quote a small section from "General" by A.D. Hardy, F.L.S., it will give some idea of the excursion.

"There is no settlement on the Promontory excepting the lighthouse quarters at the south-eastern corner, and around a sawmill, which is cutting into the fine gullies on the eastern side at Sealers' Cove; the township site of Seaforth, excluded from the Park, surveyed at the northern end of the Promontory, never having been utilized.

"The only good track in the reserve at present is that of the Post and Telegraph Department. This connects Foster by way of the isthmus with the lighthouse, passing through Yanakie, across the Darby River, over timbered hills and heathy sand dunes, across the Tidal River and morass, over the Oberon ridge by the easterly of the two "bad saddles", skirting the summit of Mt. Oberon on the way, then hugging the low saddle to the east of the Oberon-Norgate Valley, and escaping the morass except a portion which is "logged", it ascends a ridge near Martin's Hill, and descends on the southern side to cross Roaring Meg Creek and trend south-easterly to South-east Point.

"Along this route are at least two suitable camping grounds. One is on the south bank of the Darby River, reached by crossing the river

WILSON'S PROMONTORY (Cont'd.)

by the footbridge, and dropping down behind the sand hummocks, where the telegraph line repairers' hut is enclosed in a small horse paddock. The other is behind the sand hummocks of Oberon Bay, on Fraser's Creek. At both places good water and grass for pack horses is plentiful. Other camping grounds exist, but for want of cut tracks are not accessible. Such are the mountain-locked enclosures at Sealers' Cove, Refuge Cove &c., which can be reached more conveniently by boat from Welshpool or Port Albert, but are otherwise isolated from the rest of the Park.

"Our party commenced the journey from Foster, on the South-Eastern railway line, distant 107 miles from Melbourne, where supplies of fresh bread and meat were obtained, and sent by pack horse via the Yanakie isthmus. We walked to "Foster Landing" on Stockyard Creek, a distance of about two and a half miles. This landing was once of greater importance than at present, the railway extension to Welshpool and Port Albert having left it in the lurch. There we boarded Mr. Taylor's well-equipped yacht 'Albatross', and passed between the mangrove-covered mud banks out into Corner Basin, where we crossed, and cast anchor at the unimproved "landing", as near the dry land as the gradually sloping mud flat would allow. By wading we removed our baggage, &c., to a place of safety, and were soon joined by Mr. W. Barker, who, with his assistant, Mr. Bena Claverino, brought our five pack horses round from Foster via Yanakie. Crossing a low sandhill, vegetated with eucalyptus, honeysuckle, grass-tree, &c., at the foot of the Vereker Range, we struck across the open heathy country and swamp lands to the telegraph line track, and by this continued southerly, up and down sand hummocks - vegetated in places, while to others the fine sand drifting before the wind gave the appearance of smoking volcanoes - to the Darby River Camp. Owing to the courtesy of the Post and Telegraph Department, we were enabled to use the repairers' hut as a store-house for provisions, and pitch our tents in the fenced grassy enclosure on the river bank. Having explored the Darby River flats, the sand hummocks, and the coast of this part, we moved southerly across the timbered hills, heathy undulations, and Tidal River swamp to the Mt. Oberon Ridge. The main party crossed this ridge by what is known as the "Bad Saddle" and had a steep climb before the beauty of Oberon Bay lay spread beneath them to the south. Meanwhile the botanical members had spent much time about the Tidal River and swamp, and had climbed round the

WILSON'S PROMONTORY (Cont'd.)

summit of Mt. Oberon on a saddle on the eastern side, and descended into the valley about the head of Growler's Creek. Notwithstanding the simple "lay of the country", the obstacles to progress presented by jungles and swamps were of too formidable a nature to be overcome, and a detour by the south too long. They slept on the mountain side, and rejoined the main party in camp at Oberon Bay, after having been without food for nearly twenty-four hours, though with many additions to the plant collection. At the Oberon Bay camp much energy was displayed by the photographers, who climbed the surrounding bouldered hills to obtain views. After examining the shoreward end of this wide valley, we crossed the Promontory to Waterloo Bay, examining as we went the grassy sand dunes, which extend far inland, and crossing the low saddle which bridges the valley from Mt. Wilson Range to Martin's Hill. The trip from Oberon Bay camp to Waterloo Bay and return can be done in a day, and pack horses can, but with some difficulty in absence of a cut track, be got over most of the marshy ground on the east side to within a mile of the shore.

"Long before the collectors and photographers were satisfied, our time limit had expired, and we returned via the Darby River to the landing at South Corner by almost the same route, but by small deviations examining fresh country. There the 'Albatross' lay heeled over in the mud, to be righted by the incoming tide, which done, we waded to her, and with a favourable wind were at Foster Landing in less than three hours.

"Our work occupied eight days, and our tracks totalled altogether some fifty miles. The expenses of the trip were by economy kept within an average of £4.10s. per member, which is about 10s. more than that for a similar term in the Otway the previous Christmas, but taking into consideration the difficulties in the way of provisioning and transport the expenses may be considered as very moderate. The original arrangement of 10 lbs. per member for personal effects outside blankets, &c., was abandoned for what amounted to much the same thing, 30 lbs, including everything but tents and provisions, and this was found to be ample. The whole of our tents, provisions, collecting apparatus, bedding, &c., carried by the five pack horses, reached nearly half a ton."

THE PHOTOGRAPH

(See p.102) Particulars on the back of the photograph read:

The Field Naturalists' Club Excursion to Wilson's Promontory, via

WILSON'S PROMONTORY (Cont'd.)

Foster, Corner Inlet, and Yanakie, under the leadership of A.D. Hardy - December, 1905.

Two weeks, 6 tents, 5 pack horses.
Two camps, Darby River, Fraser's Creek.

Geology	Dr. Hall
Zoology	J.A. Kershaw, F.E.S.
Anthropology	A.S. Kenyon, C.E.
Mineralogy	Dr. Pritchard
Photography	Mr. Macy, Mr. Armitage
Botany	A.D. Hardy
Ornithology	Mrs. A.D. Hardy

"Leaving Foster Landing for the journey across the Inlet.

"From Foster the party crossed Corner Inlet in the sailing boat 'Albatross'.

"In the picture Mrs. Hardy is standing opposite the furled sail on mast, with alpenstock in hand. A.D. Hardy in shirt sleeves facing camera."

(Actually, the latter appears to me to be an error. I think A.D. Hardy is seated, second from right, coat on, panama hat.)

Photograph by Mr. Macy.

EDITOR'S NOTE:
It may be of interest to members to know that a daughter of Mr. and Mrs. A.D. Hardy (Mrs. G.F. Higgins of Highton) is a member of the Geelong Field Naturalists' Club, as is the present writer, Mrs. V. McHaffie.

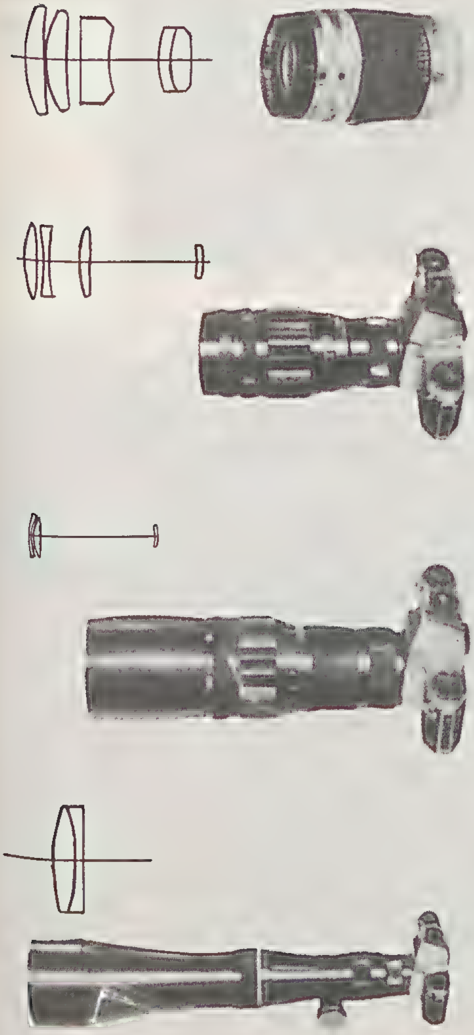
*　　　　*

AT RIGHT:

Mrs. Hardy examining wildflower, Wilsons Promontory.

Photo by A.D. Hardy.

February
1970



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BROKEN HILL AND THE BARRIER RANGES

By Adrian Davey

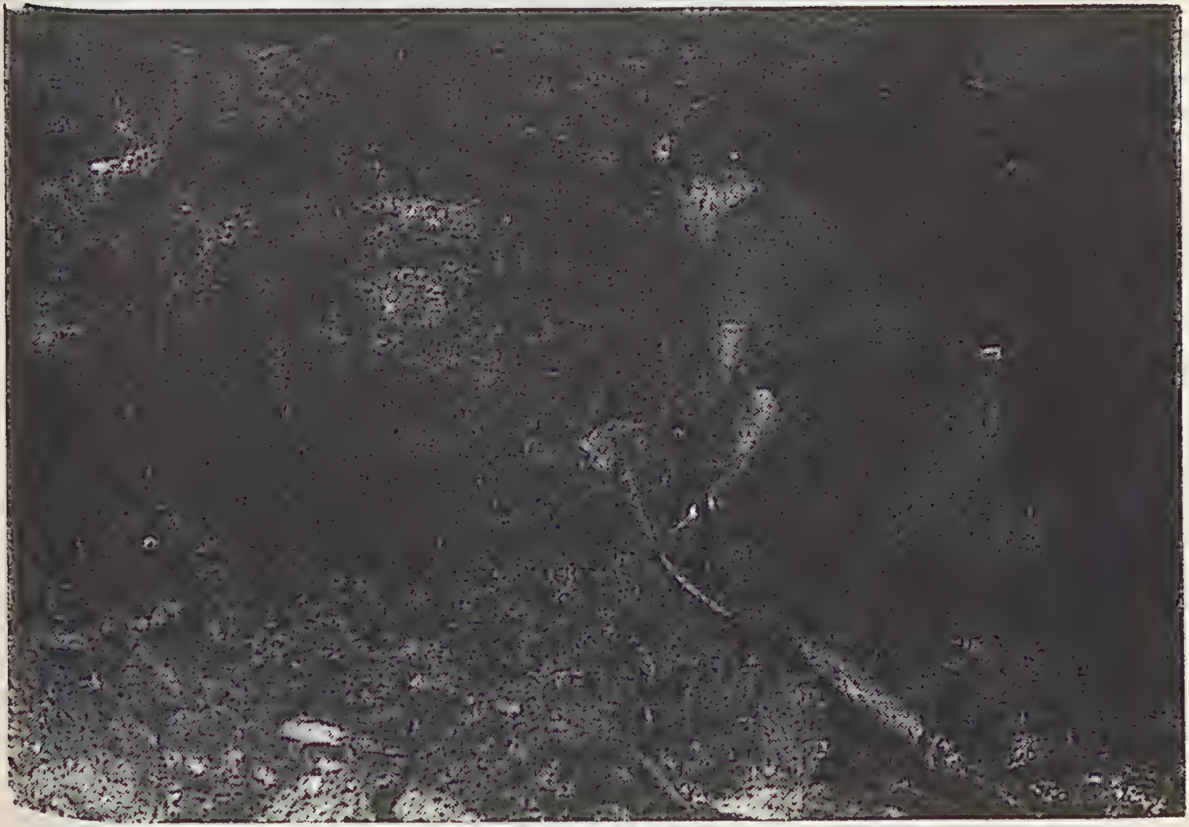
Australia's outback presents many unusual and unique sights to the traveller,but one of the most incongruous and unexpected is to drive out of the Thackaringa hills in the Barrier Ranges, and from the top of a hill, be confronted with Broken Hill spread out in the distance. Unlike most towns, Broken Hill exists only for the wealth beneath its streets, and from many miles away the shaft headframes and residues dumps of the mines are a distinguishing feature rising out of the drab saltbush.

The town originated from the finding of silver and lead by boundary rider Charles Rasp on a black outcropping hill in 1883. Then followed a saga of Australia's history that is best described in Geoffrey Blainey's "The Rise Of Broken Hill" if the reader wishes to pursue the romantic history of the area. As a result of the silver boom of the 1880's the Barrier Ranges today are everywhere pockmarked with the evidence of man's subterranean quest for shining wealth.

In contrast to the roaring 80's the Barrier Ranges are now quiet and the only centre of mining is the town of 30,000 that is Broken Hill. Four companies remain to mine the lode that has already produced over 100 million tons of ore worth about $400 million in silver, lead, and zinc. The town is literally an oasis in the desert. Good amenities and social services are provided for the townspeople. The Flying Doctor Service operates a base there and the town now has an assured water supply from Menindie on the Darling to the south-east. Cost of living is slightly higher than the capital cities but higher wages and the lead bonus more than compensate. Broken Hill is a hardworking, dusty, rough outback town in many respects, and it boasts 30 hotels and another dozen licenced clubs. Industrial disputes have played a key role in the development of the mines and town, and the Unions have very effective control over many aspects of life there.

The Barrier Ranges themselves are old and eroded. The rainfall in the area ranges from 8 to 11 inches annually and the vegetation is dull, sparse and stunted. Trees are generally scattered and gnarled Buloke, Mulga or Mallee. The ground cover consists mainly of saltbush, bluebush, some spinifex, and various other woody and often prickly plants. Emus and Kangaroos are the only common forms of wildlife apart from birds, mainly because the whole area is grazed

A view of North Broken Hill Ltd. Mine Complex.



Underground drilling in preparation for blasting.

Photos by A. Davey.

BROKEN HILL AND THE BARRIER RANGES (Cont'd.)

and indeed the pastoral industry (sheep) is the only other industry apart from mining. At Mootwingee, some 60 miles north of Broken Hill on the Tibooburra Road, there are some excellent Aboriginal rock paintings, and at numerous places throughout the ranges artifacts of various kinds have been found.

Every day, beneath the streets of Broken Hill, thousands of tons of ore are drilled and blasted. The minerals present vary along the two miles or so length of the lode, but are mainly Galena (lead), Sphalerite and Marmatite (zinc), with significant concentrations of silver, with minor gold, antimony and cadmium. The ore is scraped or loaded with big end-loaders into chutes or railway trucks and either gravitates or is hauled underground by train to the shaft. The broken ore is transferred to the surface in huge buckets called "skips" and then goes through the crushers and ball mills to the flotation cells where the valuable minerals are collected and the waste removed for return underground. Each day long train-loads of lead or zinc concentrates leave the town for Port Pirie in South Australia, where the concentrates are smelted. Some of the zinc concentrate is shipped to Risdon in Tasmania for treatment.

The future of the town is assured for many years to come, because many millions of tons of profitable ore remain in the famous boomerang-shaped lode. The richest ore was close to the surface and was mined out early in the town's history, but the ore persists to depths of 4,000 feet and more. There are few ore bodies in Australia that can equal the "Fabulous Hill" in the variety of minerals to be found in the mines. Although the basic feedstock of the treatment plants consists mainly of the sulphide minerals of lead and zinc, almost all metallic minerals are present including copper, uranium, manganese, tungsten, bismuth and a vast number of non-metallic minerals. Broken Hill has been, and still is, a paradise for the geologist and collector of minerals.

The broken hill that has, by the whim of nature, become a big town, has plenty of life in it yet and will continue to produce vast amounts of wealth both monetary and scientific.

* * * * *

WING-CLAW OF WATER BIRDS

By Ellen M. McCulloch, Mitcham

One of the characteristics of the family Rallidae, which contains the Coots, Rails and Moorhens is the small horny spur or "claw" on the end of the first digit of the wing (Hans Hvass "Birds of the World" 1969 Methuen, London). This spur does not protrude forward as does the spur on the Spur-winged Plover Lobibyx novae-hollandiae, but points backward along the wing. In Australian species it is present in both downy young and adults of the Coot Fulica atra, Dusky Moorhen Gallinula tenebrosa, Eastern Swamphen Porphyrio melanotus and others.

Arthur Cleveland Bent's "Life History of North American Marsh Birds" (1963 re-print Dover Publications New York) re Gallinula chloropus states p.351 "There is a sharp spur at the bend of the wing, which the young bird uses to assist it in climbing among the reeds and lily pads."

"Birds of the British Isles and their Eggs" T.A. Coward, 1969 Frederick Warne & Co. Ltd. London-New York states p.111-112 (re Moorhen G. chloropus) "On the bastard wing is a distinct rail or claw, which, like that of the Hoatzin of South America, is used in climbing. Coward saw a tiny bird scramble into the nest, using its wings as hands, and C.B. Moffat watched a nestling climb from the water up a steep bank 3 or 4 feet high, clutching the herbage with its wing-claw."

There do not appear to be records of the use of this claw in Australian species, and published field observations relating to it would be most interesting, and valuable for comparison with related species.

* * * * *

"THE BIRD BATH" - A SEQUEL

By Oonah McHaffie, Park Orchards

My article "The Bird Bath" appeared in the Journal of April, 1968, but had been written some time before the drought brought many more birds regularly to the bath.

In my previous comments I mentioned a group of birds not yet identified as they were casual visitors and were unknown to me. During the drought they became regular visitors to the bath and I was able to identify them as the Brown-headed Honeyeaters. They are more quaint than attractive with their over-all brown appearance with darker brown head, the most distinguishing feature being the narrow buff crescent round nape of neck and extending to the orbital band which is also light coloured. There is some olive-green on the back, mostly observed when the birds are hovering.

These Brown-headed Honeyeaters always arrived at the bird-bath in a group of at least six, often nearer to a dozen, heralding their approach with a series of chirping sounds. They would perch on the rim while drinking or between quick dips and then would perch in the nearby Cootamundra Wattle to preen themselves. Their perching and preening habits seem to be unlike any other birds we have observed. They would sit in groups ranging from perhaps four in one to six in another, as tightly packed together as possible, and would preen themselves while in this close proximity. It seemed quite a feat.

The bird-bath was the first attraction to bring them to our property but we are pleased to find that this spring they are visiting our native plants, the most popular being the grevilleas, and Kennedya rubicundra which they seem to enjoy particularly. Our Kunzea baxteri flowered for the first time this year and, as the lovely bright red brushes are on the ends of the branches, it was a delight to watch the birds swaying on the flowers while feeding on the nectar.

Other birds which we had not seen before the drought and which came to the bird-bath were the Spotted Pardalote and the White-naped Honeyeater. The latter came sometimes singly but more often in a party, sometimes mixed with a party of Brown-headed Honeyeaters. On one notable occasion the bath was overcrowded with six or more Brown-headed Honeyeaters and about the same number of White-naped Honeyeaters. It was impossible to get an accurate count as they

"THE BIRD BATH" - A SEQUEL (Cont'd.)

moved around jostling for a position on the edge and waiting for a turn to plunge into the water.

Last summer was the first time that we had noticed Grey-backed Silvereyes using the bath. The previous summer, when there were no water restrictions, they came to enjoy the spray from a hose but we did not notice them using the bath. It was also the first time that the Yellow-faced Honeyeater stayed around during the summer and autumn. The bird-bath was the attraction. Previously we had only observed this bird while the Grevillea juniperina was in flower in spring and early summer.

The shortage of water drove some of the larger birds to using the bath. We are not very pleased about this as we wanted to encourage the smaller birds and one Magpie, or even a Grey Shrike-Thrush, having a sit-in bath used up all available space. It also caused more work in keeping the bath filled because of displacement caused by the larger birds.

Fortunately, the sparrows patronised the cats' water dish, nearer the house, and the mynas and blackbirds did not trouble us, as they apparently used the troughs kept filled for the cow and the two ponies. As we have masses of these introduced species around, the bird-bath would soon have been depleted of water if they had taken to using it.

During this summer we had many opportunities to observe the bathing habits which seem to vary considerably from one species to another. The small Thornbills would perch on the rim between dips, fluff themselves out and do most of their preening there. They appear to be able to sense or smell the presence of fresh water from some distance. Sometimes not a bird would be in sight but, as soon as we had filled the dish with fresh water, we only had to withdraw some little way off and wait a short time and the Thornbills would arrive and perch on the rim. The Grey Fantail would also spend sometime on the bath. Being a very friendly bird he particularly enjoyed mixed bathing, especially with the Thornbills. The Willie Wagtail, on the other hand, would spend a considerable time on the bath but was so busy warning all other birds to keep away that he did not enjoy the pleasures of the bath. The Honeyeaters, White-eared, White-plumed, and Yellow-faced, were nervous when bathing and drinking. After a moment or two they would be away to the safety of

"THE BIRD BATH" - A SEQUEL (Cont'd.)

a tree. But the funniest to watch was the Eastern Spinebill. He would fly from the nearby Cootamundra Wattle, in for a quick dip, return to the shelter of the tree, and back again to the bath, without any time for preening. One day we watched one particular bird and he had fifteen dips before we lost count. A pleasing sight one day was two Scarlet Robins, which we thought were immature males, thoroughly enjoying themselves in the water and splashing it over the sides.

The complete list of birds which we noticed regularly on the bath between the beginning of January and the end of March, 1968, is:

Fantails - Grey, Willie Wagtail.
Honeyeaters- Brown-headed, Eastern Spinebill, White-eared, White-naped, White-plumed, Yellow-faced.
Magpie - White-backed (one or two occasionally).
Pardalote - Spotted (occasionally).
Thrush - Grey-Shrike (occasionally).
Thornbills - Brown, Little, Striated.

* * * * *

COLORFUL TELEPHONE DIRECTORIES

By Trevor Pescott

The P.M.G. have again this year decorated the covers of their district telephone directories with color photographs of local fauna, this year using mammals and lizards. (Last year it was birds, and we hope future years may bring forth other series of nature photographs.)

For Geelong, we have the Tiger Cat; Colac to Portland and Edenhope has the Barred Bandicoot; Bairnsdale to Sale and Mornington has Leadbeaters Possum; Wangaratta - Myrtleford has the Feathertail Glider; the district around Seymour has Echidnas, Mildura the Thick-tailed Gecko, and Ballarat to Nhill district has the Bearded Dragon.

Congratulations, P.M.G.

THE A1 GOLD MINE

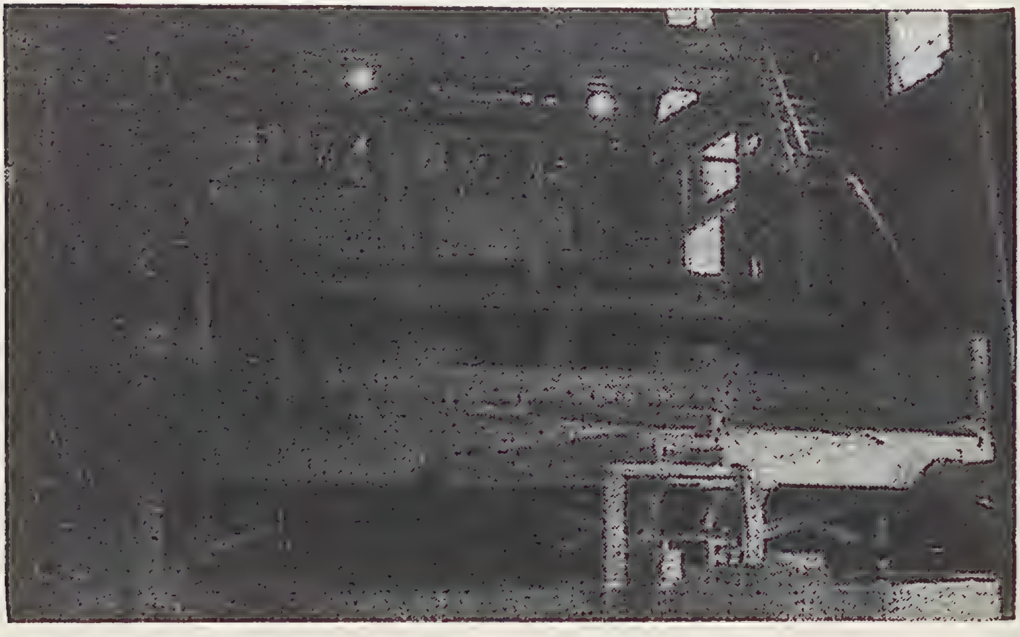
By A.G. Davey

Suddenly the noise of the battery died and the air was still. An era of Australia's history had come to an end at the flick of a switch. Never again would the valley echo to the roar of Australia's last company owned stamper battery, for the A1 Consolidated N.L. Gold Mine near Gaffney's Creek closed down in September 1968. The A1, Victoria's last mountain gold mine was in the rugged ranges south of Mansfield, just seven or eight miles north of Woods Point.

The mine was discovered in 1863 by a bearded Irish prospector wandering through from the newly discovered gold at Stringer's Creek and Woods Point. At first the reefs were worked by open cut as well as underground, and today huge mullock heaps lie below a gaping scar in the hillside up above the mine. By the late 1870's the A1 had a stamper battery erected and operating, and was surrounded by other mines - the South A1 mine, the Rose of Denmark Mine, the Dempsey mine and several others. Work ceased in the open cut around the turn of the century and it was at about that time that the present main shaft was commenced. During the early days of the mine, and especially the thirties, the upper levels of the mine were honeycombed with workings, and it was not until later years that the mine reached depths greater than a thousand feet. In 1948 the Company struck the Victory Lode that was to produce some phenomenal yields. Assays of 7 ozs. to the ton were common, and the average was 5 ozs. In a time of frozen share prices, the company paid dividends greater than the market value of the shares during this period. Over the years the company has paid over $2 million in dividends. The mine closed down just recently because the ore it was treating was an unprofitable 7 dwt. to the ton - less than half an ounce. When the mine closed it was employing only 18 men, about ten of them underground. At the time of the Victory Lode there were seventy five men underground. In recent years, the battery, which was replaced in the early 50's was treating about three hundred tons a fortnight for a return of one hundred ounces of gold. At present value this production was worth about $7,500 a month while production costs have risen to $10,500 a month, largely as a result of high labour costs. The mine would need to be treating ore assaying one ounce to the ton to have profitably continued operation.

The gold-bearing quartz reef occurs in a dyke of dionite running roughly N-S and about five hundred feet wide, on slate country rock.

The Battery House, Power House, Workshops and Crusher.



Inside the Battery House

Photos by A. Davey.

THE A1 GOLD MINE (Cont'd.)

There is a tendency for the gold to be associated with the reefs on the "hanging" wall of the dyke, that is, on the top slope rather than the bottom of the dyke, and hence most of the workings are on one side of the dyke. Unlike many mines, the A1 had no headframe. An adit, or tunnel, ran straight into the hill for nearly a quarter of a mile until it intersected the dyke, and the shaft goes down from this point. The winder that operates the cage is situated in an underground chamber sixty feet above the adit level. From the adit the shaft goes down about half a mile, with twenty one levels off it - like twenty one floors in a building - at intervals of about one hundred feet.

On a particular level, a "plat", or large underground chamber is blasted out close to the shaft, and then drives are put in to intersect the reefs. Diamond drilling is used to direct the development of mining into new areas, and to determine the existence of gold in a particular reef. The reef itself, if payable, was completely blasted and dug out and the ore trucked along the drive on a railed mine trolley, or dumped down a chute for collection on the next level, a hundred feet or so below. Unlike the oldtimers, the miners of recent years had a much easier time. The miners of a century ago drilled blast holes with a hammer and a steel which was turned by hand between blows. Today the miner can drill many more holes in much less time with pneumatic drills and carbide drill bits. Even so, the humble miner's pick still plays an important part in getting the ore out. When the ore is taken to the shaft it is hoisted to the adit level and taken out to the surface in dump cars hauled by a tiny electric locomotive.

At the surface, the ore is dumped into bins and gravitates to the primary crushers before going into the battery bins. The battery itself consists of five metal rods, each weighing several hundredweight and tipped with hard steel shoes, in a steel box not unlike a piano in shape. The stampers move up and down and pulverise the ore between the stamper and the bottom of the battery box. The fine ore passes through a screen and over amalgam plates where most of the gold is retained, and then passes over several concentrating tables. The tailings are discharged into the creek and the concentrates are later cyanided. Power for the underground workings and for the battery and mine buildings has been supplied by the S.E.C. for several years now, but was originally produced in the Company's

THE A1 GOLD MINE (Cont'd.)

own diesel powerhouse. This powerhouse, with its generators and compressors is still part of the mine buildings. Because the country near the mine is so rugged, and the nearby hills so steep, the mine buildings, including the battery house of several hundred feet in length down the hill, are clustered close together, and the houses and tiny Post Office are grouped together along the creek. The settlement will soon die. The machinery and mine buildings, sold by auction, will be taken away for scrap, or left to rust as passing reminders of a mining era. The miners have left for other jobs, or gone to other mines in the fast expanding areas of Western Australia and Tasmania. For the first time in many years, the valley is quiet.

* * * * *

KNOCK, KNOCK, WHO'S THERE?

By Trevor Pescott

One evening some time ago, I heard a rather urgent noise at the front door of our home in Belmont.

I investigated, to find who was trying to enter - and found to my complete surprise, a Ring-tailed Possum, clutching frantically to the door frame just at face height, having been disturbed by our little Silky Terrier as it crossed our front garden.

I often wonder what would have happened if the Possum had called the terrier's bluff.

* * * * *

HATTAH NIGHTS

By Trevor Pescott, Belmont.

At the end of October and the first days of November several years ago, I spent five days at a hut in the Mallee in company with three other Geelong naturalists, and a bird photographer from Melbourne Mr. L. O'Connor.

Mr. O'Connor knows the Hattah area of the Mallee extremely well, having spent many weeks there over the last 10 years. He and other Melbourne bird observers, and members of the Ouyen Field Naturalists Club had built a hut near Lake Hattah some years ago. When the National Park was declared, the hut had to be removed, and a site behind the railway station was chosen.

Mr. C. Tingate, well known to Geelong naturalists assisted by Hattah naturalist Mr. Ben Eggleton, finished rebuilding the hut (it was framed up earlier in the year) and had made it ready for habitation by the end of October.

About this time, we joined Mr. Tingate for what was virtually a long weekend.

The first day after we arrived (we reached Hattah at 2.30a.m. after a long night drive of 300 miles) was hot and humid, and we spent the time familiarising ourselves with the sights and sounds of the Mallee.

After our evening meal, we spoke of some of the rareities of the district, and Mr. O'Connor told of such creatures as Coral Snakes, Numbats, Mitchell's Hopping Mice, and Mitchell's Short-tailed Snake.

Our conversation grew more general, to the common Geckoes that lived under loose bark, and Blind snakes which burrow in the ground. Mr. O'Connor remarked - "Some years ago, I chanced to walk along a track at night, and caught a Blind snake as it crossed the track - they're nocturnal you know." (Yes, we did).

It was a warm humid night, so the inevitable remark came - "Let's get some fresh air - this hut's too hot!" It was too early for bed, anyway, and too hot to sleep.

Mr. O'Connor and I, at least, thought this, so we left the others at the hut and wandered down the track south of the hut, enjoying the fresh air and the "feel" of the Mallee - something one has to experience to understand.

HATTAH NIGHTS (Cont'd.)

Within 200 yards, we found the first Blind Snake, wriggling casually across the red, Mallee sand track; I picked it up, and found it difficult to hold - it was about 10 inches long, worm thin and eel slippery. Un-worm-like was the strength of its body however, and it proved extremely unwilling to enter the matchbox which we intended to be its temporary home.

Another hundred yards further on, we found a Gecko - a beautiful, grey, tree-dweller called the Marbled Gecko.

Within another 50 yards was a second lizard, this time a beautiful, pink species called the Beaded Gecko. Unlike the Marbled which has suction pads on the feet indicating a tree-dwelling habit, this one had straight clawed toes suggesting its terrestrial nature.

We returned to camp well pleased with our haul, and sparked off an enthusiasm which stayed with us throughout our camp, a keenness to learn more of the reptiles and other rarely seen fauna.

The second night again proved warm and humid, but with the prospect of thunderstorms; almost as soon as we left the hut, the glow of lightning low in the southern sky heralded the change which came late in the night.

This time, Mr. O'Connor and I were joined by Mr. Eric Bound and Mr. Geoff Gayner, and the additional lights and eyes produced an increased catch. Three species of Geckoes, including 8 individuals, and several Blind Snakes of two species were found within a few hundred yards.

Unfortunately, the weather turned cold after that evening, so on the remaining nights we did not bother searching, as we knew there would be too little activity to warrant the additional lack of sleep.

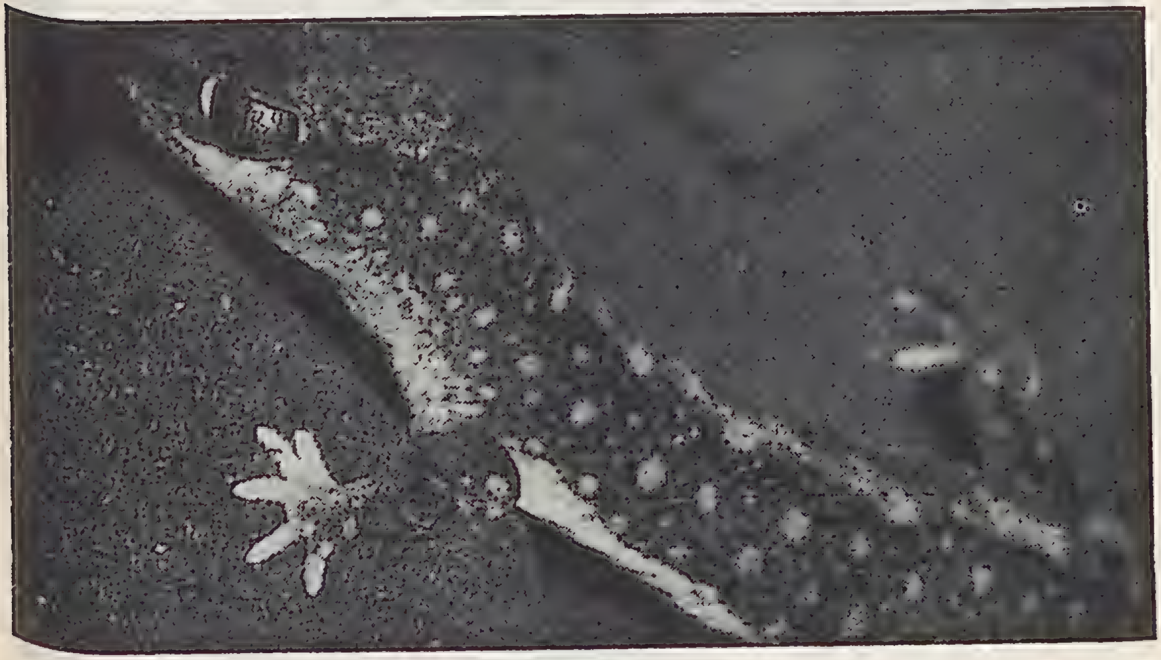
This all goes to prove, I think, the worth of a night-time bush ramble, for so much of our native fauna is nocturnal.

Footnote:

The five reptile species recorded were -

Beaded Gecko	Lucasius damaeus
Marbled Gecko	Phyllo dactylus marmoratus
Thick-tailed Gecko	Gymnodactylus milii
Blind snake	Typhlops nigrescens
Blind snake	Typhlops sp.

Typhlops the Worm-snake.



Beaded Gecko

Photos by Trevor Pescott.

HATTAH NIGHTS (Cont'd.)

I rather prefer the term "Worm Snake", for although they do have only rudimentary eyes, their general appearance and burrowing habits are distinctly worm-like. They are, of course, completely harmless to anything larger than termites which are a favourite food.

* * * * *

VALE EDWARD TAYLOR

Although unable to take an active interest in Club activities in recent years, we remember Edward John Ramsay Taylor as a member of our first committee; he was elected to his position on the committee at the inaugural meeting of the Club, on April 11th 1961, and served for two years before retiring through a serious illness that curbed an extremely active life.

Born at Talbot in Victoria, Mr. Taylor rose to become one of Victoria's leading hospital administrators; he joined the staff of the Geelong Hospital in 1933, and after several years, was appointed to the administrative staff of the Warracknabeal Hospital, and later to the Melbourne Hospital.

He returned to the Geelong Hospital staff in 1949, where he remained as its chief administrative officer until 1964 when he resigned due to ill-health.

Although unable to participate in any of the wide variety of interests he undertook prior to the long illness which resulted in his death on February 11th this year, he will be remembered as a keen and perceptive man in many activities throughout Geelong.

Our sympathy is extended to his widow, their son and daughter.

T.P.

* * * *

AT RANDOM

FLY AGARIC AT DURDIDWARRAH - by Trevor Pescott.

On December 7th., 1969, several members of the G.F.N.C. were engaged in the "challenge" Bird Count, a day devoted to the search for birds in selected areas over the Central Victorian Region.

Although birds had occupied our thoughts more intently than had any other aspect of natural history, it is quite impossible to completely exclude all other animals and plants from a naturalist's mind, so as we walked through our prescribed areas, ears and eyes straining to hear or see every bird present, subconsciously mental note is made of other features.

My team of observers had moved into a pine plantation at Durdidwarrah in the hope of finding the roost of the Powerful Owls which frequent this area; the best way to do this is to look for the casts and droppings of the birds, so we moved along the rows of pines, eyes downcast, searching for the tell-tale pellets of undigestable fur and bone that the birds regurgitate.

There, on a mat of pine needles, we found something completely unconnected with Powerful Owls but almost synonymous with pine plantations - a crop of Fly Agaric fungi (Amanita muscaria).

The toadstools were beauties, fully 6 inches across, but rather faded red than the bright hue we usually expect.

I can not recall seeing them in this plantation before, nor have I heard of them appearing in early summer rather than autumn when we usually look for them.

WEASEL SKINK, ALIAS "BANANA SKINK" - by Trevor Pescott.

There is a little skink lizard known amongst local schoolboys as the Banana Skink; this name is apparently purely local, yet I have heard it used on several different occasions.

AT RANDOM (Cont'd.)

My first introduction to this species was one which Patrick Ward had caught for inclusion in his collection of local reptiles, a collection which ultimately won for him an award in the 1969 Science Quest.

Neither Patrick nor I know the species at all, and after the Quest but before we could have the lizard identified at the Museum in Melbourne, it came to an end in the jaws of a large Cunningham Skink left to share its quarters.

Eventually a name was located, quite endemic apparently and a vernacular not recognised in reference books - the Banana Skink.

As this was being investigated, assistance came quite independently and unsolicited.

Another Club member told me of a lizard he knew only as Banana Skink - did I know it? The query came from Kees Koppelaar who has been as active collecting lizards in Corio as Patrick has been in West Geelong.

Quite independently of each other, two groups of schoolboys had used the name Banana Skink, suggesting it is quite widely used in this district.

It was Kees who had the matter resolved, for he had a specimen identified at the National Museum, Melbourne, as the Weasel Skink, Leiolopisma mustelinum.

DOMINICAN GULLS - by Trevor Pescott.

Two of these birds have been seen on several occasions over the last month (January) at Mud Islands.

Known also as Kelp Gulls, they are rare in this part of Australia.

* * * *

SIR CHARLES BELCHER - A TRIBUTE

To naturalists in Geelong, no better known name than Belcher exists, and this came about by young Charles Belcher's interest in birds long before the turn of the century. Born at Geelong in 1876, and educated at Geelong Grammar School, Charles Belcher roamed the Geelong district at every opportunity in search of birds, and his splendid book "The Birds of the District of Geelong, Australia", published in 1914, is so full of information that this book is much prized by naturalists even today.

Charles Belcher was an athletic type, and his feats of walking to the You Yangs or to Cuthbertson's at Ocean Grove in a day were well known, so keen was he in searching out birds of interest.

To further his education, he went to Melbourne University to later return to Geelong and become a partner of the firm of Birdsey and Belcher, solicitors in Malop Street.

However, in the years that followed, most of his life was spent overseas. He went to London in his early twenties, and was married in London in 1908, having met his wife Sara at a social of the English Speaking Union. They had three children.

In the legal world he held many high positions and they included - Assistant Judge, Zanzibar; Acting Puisne Judge, Kenya; Member of the Appeals Court, East Africa; Attorney-General, Nyasaland; Judge of the High Court, Nyasaland; Chief Justice of the Supreme Court of Cypress; Chief Justice Trinidad and Tobago, and President of the West India Appeal Court. He was knighted in 1931.

In 1930, Sir Charles Belcher published another book, this time on "Nyasaland Birds". In 1964, Sir Charles planned to return to Australia to meet old friends and relatives, but ill-health intervened and prevented this. This was a great disappointment, not only to himself, but to us who had corresponded with him, but had never had the opportunity of meeting him. Until the time of his death, Sir Charles Belcher was the only surviving foundation member of the Bird Observers Club.

Mr. George Belcher, owner of Lilydale House Sanctuary at Batesford is a nephew. During recent years, Sir Charles regularly received our Geelong Naturalist, and took a great interest in our activities.

We mourn the loss of this wonderful man, and we extend our sympathies to surviving relatives.

J.R.W.

JUNIOR PAGES

Each year, in November, the Geelong Field Naturalists Club accepts entries in a project for junior members and groups; generally, we start to talk about the projects, and remind juniors, during the middle of the year, and often this is too late to prepare a project properly.

So, to help you remember the Project Competition, the Junior Pages in this issue of "Geelong Naturalist" lists some suggestions which you may find useful, and some hints on what the Judges will look for.

The Competition this year will be in three sections -

(1) individual members
(2) groups of members e.g. School nature clubs, or groups of friends
(3) scout, guide or similar group.

In each section, one prize will be awarded for the best project in that section.

Where necessary, several special prizes will be awarded, too, especially where young members compete with older ones and where the groups in section (2) and (3) are very different.

The prize will be a book and certificate.

Many of our entries in previous years have been in the form of project books, with a series of coloured pictures of birds, plants or animals drawn by the junior; some of these are really excellent.

Only a few, however, show that an attempt has been made to do some real observing, and this is a pity; after all, we are a Field Naturalists Club, and our aims are to interest people in birds, plants, animals, and other things found out-of-doors.

Some other suggestions for your projects are to make collections, say of stones or shells, insects or bark of trees, gum-tree seed-boxes or even leaves; pressed flowers are more difficult for

JUNIOR PAGES (Cont'd.)

most are protected and a permit must be obtained from the Forests Commission before they can be collected.

Birds nests and eggs are protected and can not be touched or collected - but why not look through some magazines and copy pictures of the nests and eggs you may see? Or make careful notes about the nests?

Another idea could be to make up a large sheet of paper, color it so that a map is made - blue for water, yellow for sand, green trees, brown for paddocks and so on - and draw on this where different birds may nest.

Always remember to write down where you see the nest, the type of tree if possible, how high the nest is from the ground, and the date you found it.

Another idea is to keep a diary - for a certain time, say a month, and write in it what birds (or plants, or insects) you see each day.

Three things will be looked for by the Judges -

(1) original observations, notes written about what _you_ have personally seen.
(2) neatness in the way you set out your entry.
(3) a different type of project, showing that you have thought out something yourself.

Lastly, the senior members have all had some experience in these projects, and their advice will be useful; ask what they suggest if you can not think of something yourself. Also, they may be able to identify any plant or bird you do not know.

Let us have this the best year yet, and give your Judges some really good entries from which to find the winners.

* * * * *

MISTLETOES

On the next page are some photographs of three stages in the growth of the Mistletoe. Do you know what each one means?

* * * * *

OFFICE-BEARERS 1969-70

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Vice-Presidents:
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THE GEELONG FIELD NATURALISTS CLUB

Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in the month, at
8 p.m. in the McPhillimy Hall, St. George's Church,
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Visitors Welcome

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VOL. 7. No. 1. MAY 1970 Price: 25c

GEELONG NATURALIST

Journal of the Geelong Field Naturalists Club

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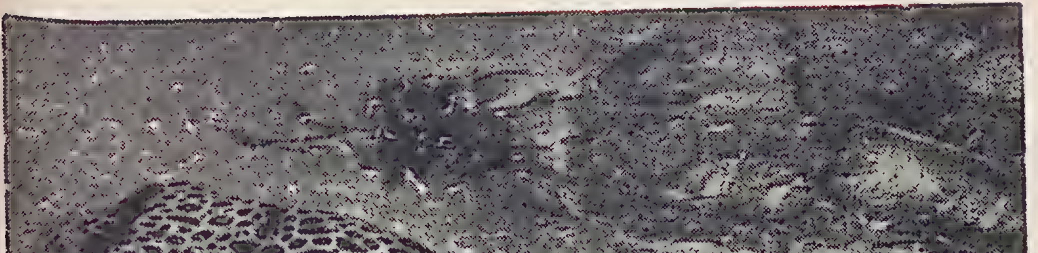

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Hon. Editor: Trevor Pescott

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

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COVER PHOTOGRAPH:

Toad-fish in a rock pool at Lorne.

By D. King.

GEELONG NATURALIST

EDITORIAL

Vol.7. No.1. May 1970.

Geelong, as a basically industrialised city with a population of nearly 120,000 people and only 40 miles from the State capital city, urgently needs the creation of more and larger reserves close to its boundaries; no longer do the local beaches and bushland cater for Geelong residents alone, for most of the western half of Melbourne must find recreation in the Geelong region.

Combined, the You Yangs, Steiglitz area, Anglesea and Bellarine Peninsula are the most accessible open spaces not just for our 120,000 but for perhaps 10 times this number when Western Melbourne, Werribee, Geelong and Colac are considered.

This presents a rather horifying picture, for already all of the accessible open spaces are hopelessly choked with crowds in all but the most undesirable weather; and the demands on passive as well as active recreation areas spirals.

Recently two new reserves were dedicated by the Forests Commission - these were over 500 acres at Bannockburn, representing most if not all of the land available there, and 7000 acres at Aireys Inlet.

The Angahook Forest Park at Aireys Inlet was rather a disappointment for we need a much larger tract of land permanently reserved in that eastern end of the Otways. However, it is felt that this reserve is a good start, the foundation stone of a truly excellent Park; representation by this Club and others may successfully have added many more acres of urgently needed forest to the reserve.

A "Case" for the inclusion of several adjacent Crown Land areas has already been suggested, and we can look forward within the next few months to this being presented to the appropriate authority.
In the meanwhile, we have the Inverleigh Common, Edwards Point, Hargreaves Paddock and a 300 acre block near the Eumeralla Scout Camp already "in hand" as far as Case presentation is concerned.

TREVOR PESCOTT - Hon. Editor.

THE CRUEL PLANT

By Geoff W. Carr

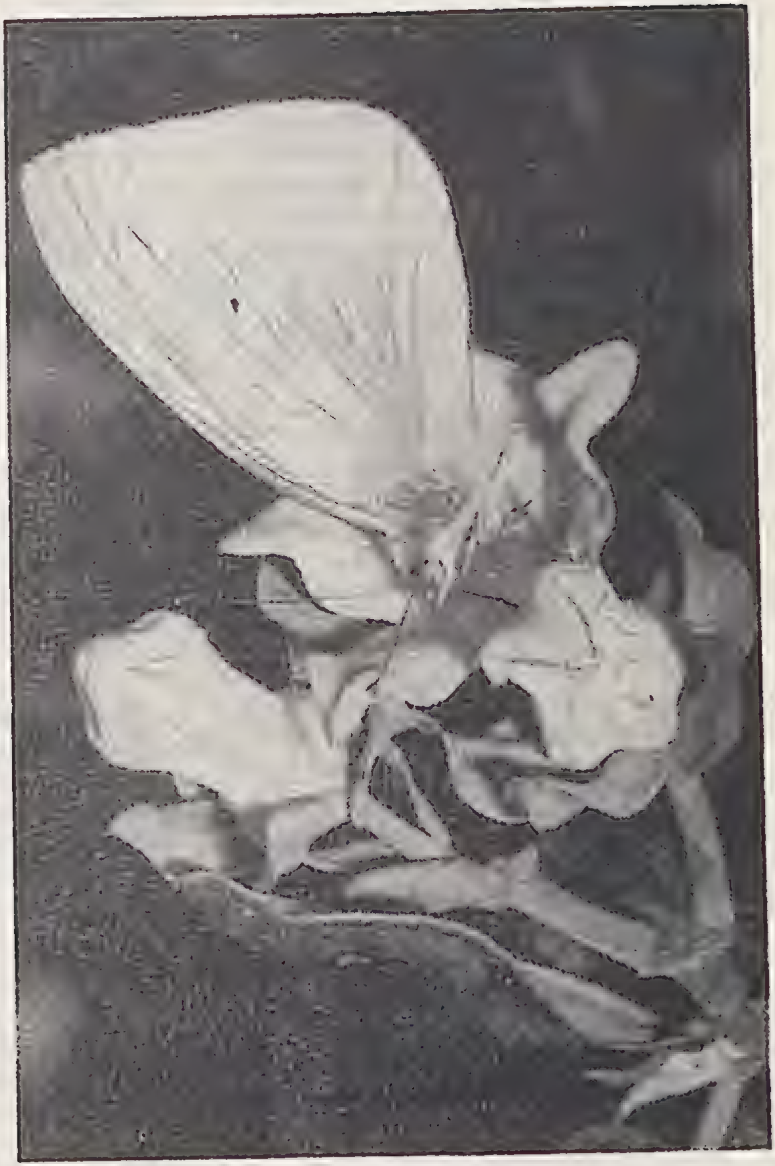
Botanical novelties emanate from all corners of the globe and not least Australia. However, one that attracts attention during summer at the Geelong Botanical Gardens is from another continent, and that, South America. It is the Cruel Plant, Araujia hortorum, sometimes also called the Moth Plant.

Araujia hortorum is a member of the family Asclepidaceae and is a woody twining shrub capable of growing to a height of ten feet or more. Both leaves and stems contain a milky juice in common with most other members of the family. Its leaves are broadly ovate, acuminate and truncate at the base (roughly triangular), entire on short petroles and glaucous, up to four inches long and two inches broad. They are whitish or grey beneath.

The flowers number one to eight (usually two or three), in axillary cymes. There are five sepals, each measuring 3/8 inch long and erect, about half as long as the petals which are joined for more than half their length to form a corolla tube with five spreading lobes about 3/4 inch across when expanded. The corolla tube is dilated at the base and is white, or white with pink stripes.

One interesting feature of this plant is the sexual parts of the flowers, and like other members of the family, have the male and female parts - androecium and gynaecium respectively - united to form a gynostegium, a special arrangement to assist in pollination. Five anthers are arranged around a central united styles and are joined to these. Hood-like appendages of the short staminal filaments collectively form a process called a corona after its resemblance to a crown. The two superior united carpels (the ovary) are thus enclosed and invisible behind the corona. Unlike most plants, the pollen of the anther lobes is consolidated into two rather hard masses called pollinia. These pollinium are joined to each other by a peg-like process called a translator and the pollinia are pendulous, one on each side of the hood-like corona segment.

So this specialized mechanism is ready to receive a visit



Flower of Cruel Plant and Cabbage White Butterfly.

Photo by Trevor Pescott.

THE CRUEL PLANT (Cont'd.)

from the right insect pollinating agents, and those attracted by a scent and a copious nectar flow should be able to carry away the two connected pollinia to other flowers, thus affecting pollination. But this does not happen quite so easily. The translators are imbued with a sticky substance so that they will adhere to a probing insect probiscus, which because of a constriction in the corolla tube just above the corona must pass very close to these. The pollinia are quite firmly attached to the stamen and the sticky translator is so effective that it will not easily relinquish its grip on an insect probiscis and neither will the pollinia relinquish theirs: thus the insect is held fast by its proboscis stuck to the translator.

Perhaps certain conditions of heat and humidity are necessary before the pollinia are released and borne away by the insect, and tropical America supplies these conditions; but it certainly does not happen often in this climate, and the mechanism defeats its own purpose, serving only to trap and hold insects to their lingering death. This is why the plant is called the Cruel Plant or Moth Plant, for part of its prey consists of moths.

The most frequent visitors to our Cruel Plant are Cabbage White Butterflies, small black ants, and bees. Bees are seldom caught but Cabbage White Butterflies are far more often caught than not, and when they visit flowers they are held by their proboscis which is as long as the corolla tube, and after much futile flapping they die, taking about two days to do so. They then swing in the breeze till they disintergrate or are eaten by spider-like harvest-men, the so called "daddy-long-legs", on their nocturnal forays. The tiny black ant ascend the stems of the plant in their ramblings and, bent on drinking, find themselves held by the angled antennae. They largely visit flowers nearer the ground and are not much bigger than the pollinia. Such insects are clearly not the natural pollinating agents.

Lepidoptera, almost surely the natural pollinating agents, in view of the large number attracted, include nocturnal and diurnal moths which are also often caught. Robust hawk-moths with pink hind wings have been seen caught in the mornings

THE CRUEL PLANT (Cont'd.)

after their fatal night flight and tethered by their body-length tongue, they hover and gyrate until death, suspended then like exotic, ornate pendulums. One day a Wanderer was caught and held fast, until it was released. Other members of the genus Araujia, and probably this species too, are natural food plants of the Wanderer or Monarch Butterfly, but larvae have never been observed on the Cruel Plant despite numerous butterflies and a total lack of other suitable plants. The Swan Plant, Asclepias fructicosa, chief local food plant of the Wanderer is also a member of the Asclepidaceae.

On one dull summer day we pulled 61 Cabbage Whites from flowers of the Cruel Plant, indicating perhaps that it would be a useful plant for the brassica grower plagued by this insect curse, and several planted around a vegetable garden might destroy a number of butterflies. The few butterflies that escape the flowers can be seen with the pollinia attached to the near end of the proboscis, and on visiting another flower, the pollinia should be deposited on the erect stigma, the first object met with inside the corolla tube.

The Cruel Plant comes from a warm climate, and has long been cultivated in European glass-houses. It was listed by the notable director of the Royal Melbourne Botanical Gardens, William Guilfoyle, as being grown there in 1883 in his Catalogue of Plants under Cultivation in the Melbourne Botanic Gardens under its synonym Physianthus albens. The plant is listed in European horticultural literature as coming from Beunos Aires, but this was no doubt the port from which it was shipped to Europe, and surely has a wider distribution than Argentina because it is such a successful species, producing abundant seed which is readily dispersed. If the flowers are fertilized and coldness does not prevent their development, the bicarpellary ovary grows into a large green fleshy follicle up to 4½ inches long and 2½ inches thick, clearly divided into two halves and longitudinally furrowed. This fruit splits to reveal a mass of brown seeds, a wonder of economical packing, with a long tuft of fine silky hair at one end by which they become readily windborne. Plants have appeared as much as 500 yards from the parent, and seeds germinate round about in great proliferations, growing rapidly during the warm weather. In Sydney the plant is a weed of waste ground, and no wonder! The plants commence flowering here in late October and bloom until curtailed by cold weather in May.

THE DUNLIN: A NEW WADER FOR THE GEELONG DISTRICT

By Fred T.H. Smith

On October 5, 1969, Mr. Rod Sympson and I spent a day bird-watching about the Melbourne and Metropolitan Board of Works Farm, Werribee; of particular interest to us were the waders which abounded there. Towards the end of the day after visually examining thousands of birds, we were looking at a small group of sandpipers on the muddy edge of the Little River, near the north end of Lake Borrie, when a Dunlin (Erolia alpina) was seen; it was in company with a few Curlew Sandpipers (E. ferruginea) and Sharp-tailed Sandpipers (E. acuminata).

The bird was observed in detail from close range, with binoculars, for over an hour, during which time all identification features were clearly noted. The Dunlin was in the greyish non-breeding plumage as were the Curlew Sandpipers near it. The Dunlin is a great rareity in Australia and Victorian records of it are limited to about half a dozen sightings. It is a bird that can be easily overlooked, as it closely resembles the Curlew Sandpiper. The main point of difference, in non-breeding plumage, is that the Curlew Sandpiper has all white upper-tail coverts, whilst the Dunlin has a wide dark line running through that area from rump to tail tip. The Dunlin is an abundant migratory wader in other parts of the world, and breeds right across the north of the Northern Hemisphere; the species occurs in a number of races. The bird seen at Werribee by Rod Sympson and me was equally as large as a Curlew Sandpiper, which probably placed it as Erolia alpina sakhalina; possibly the largest of the Dunlin races. The race sakhalina breeds from north-eastern Siberia through Arctic North America and that vicinity. This is a new species for the Geelong District.

Reference: Smith, Fred T.H. "Waders of the Geelong District" Geelong Naturalist Vol. 6, No. 3, November 1969. pp. 66-75.

* * * * *

FERNS OF THE DISTRICT - PART I

By E.G. Errey

My boyhood memories clearly bring to mind three different types of ferns. There was, of course, the Bracken Fern, never far away even in old-established farming districts, and very much in evidence on every visit to "the bush".

The giants of the family were the Tree Ferns. We didn't realise then that there were various species - I have difficulty enough even now to separate them.

But the favorite was always the Maidenhair, growing shyly in the protection of a bank or fallen log, often when other vegetation had been cleared from its neighborhood.

As we leave our early years behind us, we extend our journeyings, and mine led me to a closer experience with our bush flora along the creeks and gullies of South Gippsland where ferns of all sizes abound. Visits to such places as Bulga Park and the Erskine River provided further evidence of the great variety of fern types we have in the cool damp recesses of our forests.

But habitats like these are not the only situations where ferns are to be found. Several genera flourish in open and comparatively dry places. Two of these, Rock Fern and Screw Fern, that grow in various parts of the Geelong district, are described in this article.

Before going into details of these, some general characteristics of ferns might be mentioned.

Tree Ferns develop a sturdy trunk, in some kinds short and thick, in others slender and frequently many feet tall. Other ferns develop creeping stems, or rhizomes, from which fronds arise at intervals either singly or in clusters. So in reality, all we see of most ferns is the foliage. Usually the creeping stems are hidden. It is this feature that makes the eradication of Bracken Fern so difficult. Ploughing reburies most of the rhizomes, which continue growing in loosened soil. Fire appears to rejuvenate the pest. The most effective method of control seems to be to weaken the plants by continual cutting of the fronds as they appear.

In ground-dwelling species the rhizomes travel through the soil, but many ferns grow on rotting logs or creep along tree fern

At Left - Screw Fern.
At Right - Barren frond of Rock fern.
Sketches by E.G. Errey.

Centre - Expanding frond of Bracken fern.
Photo by Trevor Pescott.

FERNS OF THE DISTRICT (Cont'd.)

trunks whose fibrous surface provides such an easy roothold and retains so much moisture. In such cases the rhizomes may be hidden by mosses, lichens or the fibres of the trunk. But quite often, especially in damp shaded gullies they can readily be seen clinging securely to tranks of Hazel, Pittosporum, Myrtlebeech or other denizen of the forest.

As ferns are non-flowering plants they have no seed. They increase partly by the creeping rhizomes and partly by microscopic spores produced in spore cases usually found on the under side of mature fronds. Some genera, Screw Ferns and Water Ferns for example, develop separate fertile fronds to produce spores. All fern fronds first appear coiled like a watch-spring and gradually unroll as they grow.

Of the two species mentioned earlier, the Rock Fern is perhaps more often seen locally. It is widespread in Victoria, and plentiful on the You Yangs. Granite country seems particularly suitable for it is found also at the Dog Rocks near Batesford. It grows, too, in open forest around Bannockburn.

Fronds up to a foot in height grow in small clusters. The stipes, or frond stems, are fine, hard and reddish brown. Their length, and the denseness of individual fronds, appear to vary according to the soil and the moisture available.

Rock Fern makes a fine pot-plant, but, as all ferns apart from Bracken are protected by law, they should not be collected without permission.

Not so fernlike in appearance is the Screw Fern, also widespread in Victoria, and growing freely in damp sandy areas of the Anglesea district. This plant is often hidden in the grass of open bushland, and as it is only a few inches high it is often overlooked. The fronds are unbranched, and the three-sided pinnae, yellowish green in colour are attached by one corner to the wiry brown stipes. Fertile fronds rising among the barren ones are taller and more upright. The pinnae are smaller than on the barren fronds, and by their twisted arrangement, give the plant the screwlike appearance that suggests the name.

* * * * *

CLOUDS

By L. Elms

Of the hundreds of items of Natural History which have been available for our use and enjoyment since our earth was first created, it is well worth while to take a little time now and then to study the clouds, and note their shape, color, height and movements.

Clouds comprise masses of water vapour in various forms which encircle the globe, and upon which we are dependent for our rainfall to maintain human, plant, and animal forms of life on this earth of ours. It is amazing to contemplate that some hundreds of tons of water are circling around over our heads continuously in the form of a vapour produced by the influence of heat from the sun on masses of water.

When we read in the local paper that:- "There was a net gain of 32 million gallons in Geelong Water Storages in the past 24 hours", - it is staggering to think that this means there had been many hundreds and hundreds of tons of water floating over our heads in the form of clouds, which ultimately condensed when meeting cold conditions, and fell as rain.

The only form of clouds which are really tangible to us are the fogs which we encounter occasionally at ground level when humidity is high, and a cold change develops.

Above this ground level, the STRATUS clouds range up to elevations of about 3,500 feet, above which are found the dark NIMBUS rain clouds of stormy appearance, up to altitudes of about 7,000 feet. Above these again are the streaky STRATO-CUMULUS clouds capped by the CIRRO-STRATUS, and the CIRRO-CUMULUS clouds to heights of 29,000 feet - (5½ miles).

The highest of all the clouds are the "CIRRUS", which are of a beautiful dappled appearance, and are an indication of fine weather. The height of these ranges from 27,000 feet to 50,000 feet - i.e. 5 miles to 9½ miles high. They are so cold at this height that they comprise a mist of minutes ice specks, which results in them developing a feathery appearance.

Particularly in the Autumn it is a lovely scene to watch the clouds colored by the setting sun. Also CUMULUS clouds, backlighted by the moon at night present a beautiful picture

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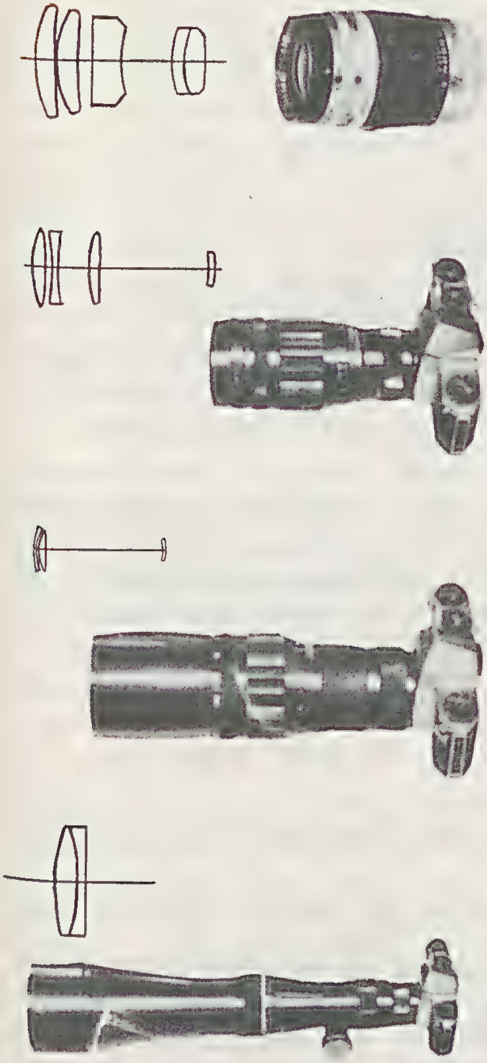

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PICTURED ABOVE ARE LENSES FOR THE ASAHI PENTAX — FROM THE TOP — 135 mm, 200 mm, 300 mm, 500 mm

CLOUDS (Cont'd.)

to behold.

In general, one of the most beautiful series of colored pictures which has ever been bestowed upon us, is to be seen by getting out of doors and studying the lovely cloud effects, which combine with the sunlight, the moon, and the stars, to create a scene which is most bright and beautiful.

* * * *

MOGGS OR BELLBIRD

By Trevor Pescott

There is some doubt as to the correct name of the watercourse we know generally as Moggs Creek. Some early maps showed it as Bellbird Creek, and this name is shown again on a recent Military Map of that area.

While the historians delve back into past records to establish the original name, ornithologists are more occupied with the reason for the name Bellbird, since locally we do not have Bellbirds or Bell Miners - and probably we never had them.

So why Bellbird?

Obviously, the explorer who named the Creek thus heard some bird with a bell-like song calling from the bush above the Creek.

My personal observations in relation to birds with bell-ringing notes are as follows:
Spotted pardalote - Some years ago, one hot summer noon, I heard several of these birds at the You Yangs, and the melancholy call of "Sleep....baby" caused me to turn sharply expecting to see Bell Miners. In my inexperience then, I did not know the Bell Miner would not inhabit You Yangs type country. Crimson Rosella - Just last month, I noted in my field book that several of these birds had a call very like the Bell Miner as well as other notes. Pied Currawong - The name "Bell Magpie" alludes to the call, for the ringing call "Curra-wong Curra-wong" is a sound which is familiar to all who visit the Otways and other mountainous areas. Crescent Honeyeater - This bird, too, has loud ringing notes, but its call lacks the bell-like tenor of the previous species.

HUMAN ACCEPTANCE - TAMENESS OF FLYCATCHERS

By Jack Wheeler

Two recent instances of extreme tameness in birds at breeding time involve two different but closely related species, the Grey Fantail and the Rufous Fantail.

The first came to my notice when Mr. Eric Bound of Ocean Grove demonstrated to me how he could stroke a sitting Grey Fantail under the chin with such regularity that it was just as if it was a bird reared in captivity and was used to human company; this was not so of course, as the bird was completely in its wild state, yet showed no signs whatever of any discomfort or fright at human approach, nor was Eric Bound the only privileged one, for anyone who approached carefully could enjoy the same treatment.

The nest was built in a sapling, no more than four feet above ground level, and was approximately 25 feet from the edge of a busy roadway, known as Shell Road, linking Ocean Grove with Point Lonsdale. This constant activity of vehicles within sight of the nest may be said to have some influence on this bird's tameness, but in the second case of similiarity, the birds involved would have little or no contact with human environment.

The Grey Fantail's nest contained three eggs at the time of my visit and as far as is known was a successful nesting.

My second story of this nature is much further afield than Ocean Grove and actually took place high up near the summit of Mt. Cole, at approximately 3,000 feet above sea-level. Mt. Cole is situated ten miles north-west of Beaufort and dominates the skyline north of the Western Highway between Beaufort and Buangor.

Visiting there on New Years Day last, I observed a lone Rufous Fantail near the Victoria Mill Scenic Reserve, but approaching rain and fog prevented further investigation as to breeding so next day I passed the information on to Mr. & Mrs. Laurie Millar of Beaufort. This is their story - "It is over two years since we found our first Rufous Fantails at Mt. Cole - a breeding pair with two fledglings. This was a thrill and at the same time a disappointment to us, as these beautiful birds were out of the nest and therefore past the stage for photography.

"Since that occasion we have searched carefully each season in

TAMENESS OF FLYCATHERS (Cont'd.)

the hope of finding another pair breeding but without success until early this year when Jack Wheeler gave us the locality of a bird which he thought could be breeding on Mt. Cole.

"Our first opportunity to follow up this information was not until Australia Day, January 26th., and being accompanied by talented nest finder, Mr. Ivan Tiley also of Beaufort, it wasn't long before we had our first bird in sight, and by checking a very attractive fern gully, soon had two birds in view. Both birds did wing fluttering, the true 'broken-wing' act, and this was a sure sign of breeding; in a matter of minutes, Ivan had the nest in view, a lovely structure delicately placed on a dry branch of an Austral Mulberry tree (Orangewood) - Hedycarya angustifolia. The nest was no more than 4'6" above the stream beneath, a delightful nesting site for delightfully attractive birds such as these Rufous Fantails.

"On closer inspection we found that the nest was composed of very fine threads of bark and dry grasses bound firmly with cobwebs and lined with fine fern rootlets. There was only one nestling, no more than two days old.

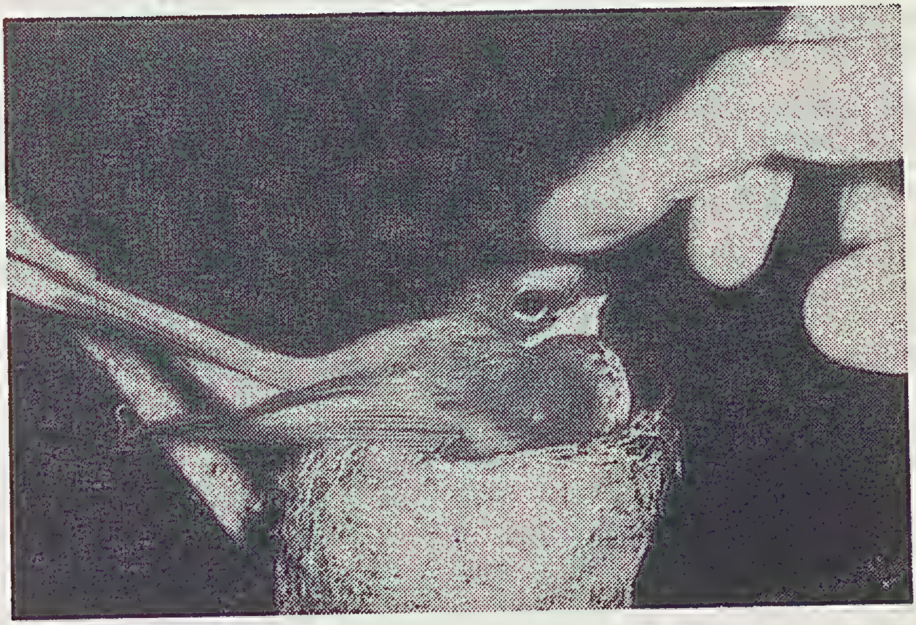
"Immediately we approached close to the nest, one adult bird flew in to cover the chick, and although we moved about freely, she paid no attention and went about other chores of feeding the youngster as if we were not present.

"What a subject to photograph and what a predicament, the 'flash' apparatus had 'packed up'! Nothing could be done, so reluctantly we left.

"However, we came back next morning at 6.00a.m. with a borrowed 'flash' and were able to take our pictures. Somehow on that wonderful morning and at that hour, the two Rufous Fantails looked even more beautiful - the brown of the bird being a perfect foil for the touches of black and white, whilst the rich rufous at the base of the tail feathers shone out in perfection, particularly when the tail was completely fanned out.

"The climax came when we were close enough to touch the bird sitting on the nest, and stroke her we did, not once but several times, and what a thrill to find this wild creature so

TAMENESS OF FLYCATCHERS (Cont'd.)



Rufous Fantail Photo by Laurie Millar

trusting.

"We watched the feeding of the nestling and the parent birds change over. We were present when a small flock of Crescent Honeyeaters invaded the scene, and what a hullabaloo.. these fellows weren't trusted as we were and were given a short shift indeed.

"Our last visit was on February 5th., over a week later, and the parents were still there, with the chick out of the nest, perched high in the nest tree, and able to fly despite its state of plumage far from complete with many pin-feathers still visible.

TAMENESS OF FLYCATCHERS (Cont'd.)

"Now we have to await another season for our favourite Rufous Fantails to return to grace picturesque Mt. Cole, and when they do, we will be wondering if they are those birds which accepted us last season with such trustfulness."

I can only conclude by saying how fortunate we are in Australia to have some 35 species of flycatchers within the Australian region, and most of which I have observed have this same trait of trust as far as humans are concerned.

* * * * *

NEW MUD ISLANDS MAMMAL?

By Trevor Pescott

Last January, as we prepared to break camp after a very enjoyable weekend at Mud Islands, I picked up from the beach a strange, calcareous object.

About 2 inches long, and perhaps 3/4 inches square, it was obviously some part of a marine creature or mammal, although none of us at the time could quite decide what it was, or had been. So I forwarded it to the National Museum in Melbourne for determination; in due course, the reply came back.

The marine object was nothing less than the tooth of - a Horse!

How long it had been in the water, we do not know; nor do we know how it first came to be in the sea.

Were it something more exciting, I would carefully add the species to the very meagre list of mammals found at Mud Islands.

Fur Seal, Common Dolphin, Rabbit, Black rat - this just about sums up the mammalian fauna list; dare I add Equus caballus, Horse?

* * * * *

NIAGARA FALLS

By May Boardman

The Niagara Falls form one of the great wonders of the world. The word "Niagara" comes from the language of the Red Indians and means "Great thundering of Waters". The mighty roar, as the rushing, swirling waters plunge over the drop of about 160 feet, makes one think of continuous thunder and fills one with awe.

The first recorded history of the Falls goes back to the year 1678, when they were sketched by the Rev. Father Louis Hennepin, who spent some time in that area. They are on the Niagara River, which flows from Lake Erie, 572 feet above sea level, to Lake Ontario, 246 feet above sea level, resulting in a fall of 326 feet in the 35 miles of its length. Almost halfway between the lakes, the water comes to the precipitous drop of about 160 feet, which form the great falls of which there are three - the American Falls and the Luna Falls or Bridal Veil, both of which are on the United States side, and the Horseshoe Fall, so named because of its shape, on the Canadian side. As 1,500,000 gallons of water pass over the three falls every second, which means 1 cubic mile of water each week of the year, is it any wonder that the Indians compared the sound to that of thunder?

At the brink, the water is divided by Goat Island, thus causing the diversion of the falls. The magnificent American falls, 167 feet in height, were originally 6 miles downstream, but crumbling rocks have caused them to retreat at a rate of almost 1 foot a year. Thousands of tons of rock fell into the gorge a few years ago, and there has been so much erosion each year that the Niagara Authority, formed in 1879, and consisting of Americans and Canadians, decided to close the American Falls in order to strengthen the cliff face.

So, on June 30th., a few days after we were there, the fall was temporarily diverted, so that the work of strengthening the cliff face could be undertaken. They expect, by the end of the summer, to clear the bed of the stream of the rock and debris, and hope to complete the work and have the water flowing over once more, soon after.

North of the Falls, there are great views of the swirling waters of the Whirlpool, 1754 feet around and 126 feet deep, where the course of the Niagara River turns westward. Blocked by the

NIAGARA FALLS (Cont'd.)

jagged mouth of a glacial channel, it curves back again into the Great Gorge towards Lake Ontario. A Spanish aerocar, suspended by steel cables, takes passengers over the great whirlpool below the Falls. Though the writer did not venture on this exciting journey, her husband did, and enjoyed the ride and the views immensely.

In the winter, the Falls of Niagara take on an altogether different aspect. The freezing spray builds mountains of ice on either side, forming fantastic shapes.

At least two observation towers of great height have lifts to take sight-seers to platforms 500 feet above the Falls. From here wonderful views of the magnificent scenery cannot easily be described.

It causes one no surprise to find that the city of Niagara on the Canadian side has become so popular with tourists who journey there all the year round, or that Buffalo on the American side has become an important air-terminal.

Nearby is the Niagara Parks Horticultural School, where the gardens are beautifully laid out, and where we saw thousands of daffodils and tulips forming what looked like multicolored carpets among the lawns. Here too, as in many other parks in the area, were lilacs of many shades perfuming the air, and peonies, rhododendrons and irisis were in full bloom. Many beautiful flowering trees - the Japanese Cherry blossom tree and the flowering crab tree growing among the soft green of the lawns gave great joy and plenty of practice to the hundreds of photographers who seemed to be standing, camera in hand, everywhere one walked.

The hours sped quickly by, and it seemed only a short time till it was time to again board a bus to Buffalo, where we walked up the gangway to our seats on the plane which took us to New York, from where we flew to London.

* * * * *

A TRIP TO FRASER ISLAND

By J.H. Whitmore

Last year, when on a tour of the east coast of Queensland, my wife and I stopped at Hervey Bay for several days, and whilst there we were told of a trip by motor launch to Fraser Island on which we decided to go. Seeking more information about Fraser Island, we were told about some of its geographical features, and interesting history.

With a length of 77 miles, this island is the largest off the east coast of Australia, and its mountainous sandhills rise to almost 800 feet in height.

There are more than 40 freshwater lakes on the island and the water in these lakes is pure and clear.

Originally known as Great Sandy Island, the name was changed at a later date to Fraser Island, this being after the ordeal of Mrs. Fraser at the hands of the aborigines. Aborigines captured Captain Fraser, his young wife and 10 of the crew, all of whom had survived when the ship "Stirling Castle" was wrecked near the island in 1836. Captain Fraser and four crew members died, and the natives led three other seamen to Brisbane. The Commandant of the Moreton Bay District, Captain Foster Fyans, sent a boat party led by John Graham to search for other survivors. Graham found Mrs. Fraser and the remaining four crew members and they were safely returned to Brisbane. Captain Foster Fyans was later transferred to Geelong to become its first Police Magistrate, this appointment was made on 5th September 1837.

During the journey from Hervey Bay to Fraser Island we passed near the shores of three small islands; on one of these, several goats were noticed grazing and two Red-backed (also known as White-headed) Sea-eagles were seen circling around, only about 100 feet in the air and we were able to obtain an excellent view of them through our binoculars.

On arriving at Fraser Island we all boarded an old four-wheel drive army truck, which was to take us 15 miles over a very narrow,rough sandy track to the other side of the island, a trip that took over 2 hours as the truck was in low gear in many places. The truck was fitted with a frame of strong, round

FRASER ISLAND (Cont'd.)

piping to keep the low branches and high scrub from hitting the passengers on the back of the truck.

The island landscape is of constant interest with its rain forests and large kauri pines.

On reaching the ocean side of the island we were delighted to see a very wide stretch of sandy beach as far as the eye could see. There were many seabirds on the beach, a large flock of Crested Terns, many Curlews, also the Common Sandpiper, Red-necked Stints and Egrets.

On the return trip, we called at a large freshwater lake, where several boys had a swim, and on reaching the beach where we had disembarked from the motor launch in the morning, thousands of soldier crabs were parading. During our return to Hervey Bay several dolphins followed the motor launch for several miles, putting on a great display of diving and swimming around the boat.

Birds seen in the Hervey Bay area included White Ibis, Pied Butcherbird, Royal Spoonbill, Black-backed Magpie, and flocks of up to 40 Magpie larks were counted.

Reference: W.R. Brownhill - "This History of Geelong and Corio Bay"
Brownhill wrote - "Governor Bourke at the request of the squatters in the Geelong area arranged for the transfer of Captain Foster Fyans of the 4th. Regiment from his duties at Moreton Bay (Brisbane) to Geelong to serve as Police Magistrate in Geelong."

This is an interesting connection, between this northern Island, and a man who later became one of early Geelong's most famous personalities.

Recently, a memorial service was held in Geelong to commemorate the 100th anniversary of his death, which occurred on 23rd May, 1870. (See "Geelong Advertiser", Editorial 23.5.1970.)

* * * * *

PORT FAIRY WEEK-END CAMP

By Jack Wheeler

BIRD BANDING ACTIVITIES & VISIT TO TOWER HILL STATE GAME RESERVE 24th-26th April, 1970.

Griffith Island, Port Fairy, with a narrow stone wall linking it to the mainland is well known in ornithological circles as being the most accessible Mutton-bird breeding ground situation in Victorian waters. It is for this reason that banding of Mutton-birds has been going on with seasonal regularity since it was first commenced in 1960 by Miss Gracie Bowker, a retired school-teacher resident at Port Fairy, who each season sets a target of banding at least 2,000 birds.

During the early years of banding Miss Bowker and her helpers worked arduously, night after night, by the pulling method, i.e. pulling the adult or young from the breeding burrow for banding. On the suggestion by Dr. Dom. Serventy, the C.S.I.R.O. convenor of Mutton-bird banding in Australia, the emphasis was later on chick banding and it was found that after the departure from the rookery of the adult birds in mid-April, the 2 to 2½ weeks period prior to the departure of the chicks was a much easier period for banding as chicks left their burrows at night to exercise their wings and to become accustomed to the salt air. Some adults are still banded at certain times during breeding, but the greater majority of birds now banded at Griffith Island are well feathered chicks.

Over the past ten years, Miss Bowker has been assisted by boy scouts, school children, teachers, wildlife officers, naturalists and her own relatives, but it is only those dedicated that regularly assist. Three members of the Geelong Field Naturalists Club over recent years have regularly assisted, Trevor Pescott, Geoff Gayner and myself, and mostly we camped at Miss Bowker's residence. Last year and this year most of the Geelong contingent has camped at camping grounds, in tents, caravans, cabins etc. whilst a few took advantage of motel and guest house accommodation.

This years group of helpers and visitors arrived mostly on Friday, late afternoon and evening, whilst others arrived in time for lunch on the Saturday. Much rain fell in Port Fairy over our weekend period but it did not deter our enthusiasm, and

Short-tailed Shearwater (Muttonbird), showing the double-tubed nostrils - a feature of Shearwaters and petrels.

Photo by J.R. Wheeler.

Muttonbird nesting burrows, Griffith Island, Port Fairy.

Photo by J.R. Wheeler.

PORT FAIRY WEEK-END CAMP (Cont'd.)

even though all did not participate in banding activities, all enjoyed the weekend very much.

Our programme was as follows:
Friday 24th: 8.00p.m. Griffith Island. Two teams operated with Miss Bowker and Jack Wheeler banding. Conditions ideal and birds very plentiful. Quota of 670 birds banded by 12.15a.m. Several rats were seen and Miss Bowker reported a greater mortality of chicks than usual. (Rats mass attack the birds and kill and feed on victims.)
Saturday 25th: Beach walk at 7.30a.m. (Showery conditions). 10.45a.m. Visit to Tower Hill State Game Reserve. (Report of this visit at end of this report.)
4.00p.m. Visited Killarney Beach. Showers and strong south westerlies made conditions unpleasant for beach-walking.
8.00p.m. Griffith Island - Banders Miss G. Bowker, Mr. Trevor Pescott, Mr. Geoff Gayner and Mr. Jack Wheeler. Conditions were ideal for birds which were very plentiful but not so good for operators, and a downpour at about 9.30p.m. drenched most. Banding concluded 11.00p.m. Total birds banded for the two nights - 1377.
Sunday 26th: 10.30a.m. inspection of Port Fairy "Aquarium" stocked by local fishermen. Display of local fish, sharks, octopus, eels, crabs etc. 12.30p.m. Visit to Thunder Point at Warrnambool and inspection of foot print cave. Lunch.
2.00p.m. Departed for Geelong.
(Latest report from Miss Bowker is that a big contingent of young birds departed in heavy storm on Monday 27th April, with heavy seas running. The remainder departed on following nights and were all gone by 2nd May. On Wednesday 29th April Miss Bowker with a group of helpers, disturbed poachers, who left in such a hurry, they left three sacks, one of which contained 24 dead and one live bird. Six of the birds were banded. Fisheries and Wildlife Officers were contacted to search for the offenders.)

Some notable recoveries have been made of Mutton-birds banded at Griffith Island. Recoveries reported at Hokkaido, Japan; Shimizu, Japan; Mito, Japan; Sakhalin Island, U.S.S.R.; and at Sheogama in Japan just three weeks after banding (a distance of 5,100 miles).

PORT FAIRY WEEK-END CAMP (Cont'd.)

Tower Hill State Game Reserve - Koroit:
Our group was met at the entrance by Fisheries and Wildlife Officer Mr. Gavin Cerini. He pointed out the old C.R.B. quarry, 50 yards to the east of the entrance, and here remarkable scoria layers formed during more violent eruptions are to be seen, now being weathered and eroded by wind currents.

At our first stop, an inspection was made of the "Yatt mirng" (aboriginal for white-eye) crater which is 100' deep from the lip, but 190' deep from the highest side. The crater was dry with a whitish scum of salt layer, and this is probably why the aboriginal term, "white eye". The track leading to the lookout here is 323' above sea level and gives an excellent view of the western area of the Reserve.

The Reserve was, prior to settlement of white-man, clothed in natural scrub, but today little of this is left. Of interest were two Wild Cherry saplings growing on the west bank of the rim although there are no nearby eucalypts for parasitisation.

Our main stop for the day was at the Natural History Centre, an imposing building, just completed, of circular shape, glass windowed in entirety with domed roofing coated with attractive scoria chippings.

As yet, no exhibits are on display and this will not be carried out until completion of adjacent buildings.

Mr. Cerini spoke to us in the building itself and outlined plans for display which would include a model of the Reserve, depicting the many points of interest. Mr. Cerini stated that since 1960, some 24,000 trees, many of which were grown by members of the Warrnambool Field Naturalists Club, and all of which are native to the Reserve, had been planted by members of various organisations. Mr. Cerini explained that pines previously planted will be harvested when plantation areas are needed for further planting of native vegetation. Mr. Cerini further stated that duck shooting will continue to be allowed within the Reserve and it must be remembered that work being carried out within the Reserve is largely financed from sales of Game Licences.

PORT FAIRY WEEK-END CAMP (Cont'd.)

Before lunch, the weather cleared and most members undertook the Nature Trail, details of which were provided in pamphlet form. Plants seen along this walk were Musk Daisy-bush, Woolly Tea-tree, Bracken Fern, Kangaroo Apple, Boobialla, Bidgee-widgee, Sweet Bursaria, Beard-heath. Of the trees, Swamp Gum was prevalent on the highest ridge along the Nature Trail, and one fine clump, even though of stunted growth, is natural and it is thought colonised the ridge only after the burnings of the 1860s which devastated and killed the then existing forest. Blackwood and Black Wattle, most of which had been planted were doing quite well as also were the planted eucalypt species of Swamp Gum and Manna Gum.

Extremely windy conditions made bird observing very difficult, with the result our bird list was small. Parties of Blue wrens were noted around the Natural History Centre and the delightful song of the Striated Field-wren was heard to advantage. On the lagoons, Black Swans and Mountain-ducks were very numerous and one group of Royal Spoonbills were noted on the western lagoon. Other groups of ducks were too far away for positive identification. Several Brown Quail were disturbed along tracks.

Following lunch, we motored to the main lookout, making a brief stop to observe water birds and here excellent clumps of Common Reed massed the roadway. The lookout is possibly the highest point, situated on the eastern rim of the main crater and from here a glorious view is obtained of the surrounding countryside, and of course of the whole Reserve itself.

Our final stop was made at the water storage tank where 17 acres of this Reserve is being made available to the local Water Trust, and also to inspect the pollution of a natural spring by waste from a local milk factory. The stench from same was most objectionable and for this polluted water to be allowed to flow into a natural fauna reserve is something which we most certainly must take up with the authorities involved and endeavour to have stopped. From here, we were able to see clearly in the distance three Emus, beyond the north lagoon. They were introduced here and appeared to be doing quite well in natural surroundings of Woolly Tea-tree and tussocks in the western section of the Reserve.

PORT FAIRY WEEK-END CAMP (Cont'd.)

Trees, Shrubs and Plants of Tower Hill Reserve:

As mentioned in this article.

Wild Cherry (Cherry Ballart)	Exocarpus cupressiformis
Pine Tree	Pinus insignus
Musk Daisy-bush	Olearia argophyla
Woolly Tea-tree	Leptospermum lanigerum
Bracken Fern (Common)	Polystichum aquilinum
Kangaroo Apple	Solanum aviculare
Boobialla	Myoporum insulare
Bidgee-widgee	Acaena anserinfolia
Bursaria	Bursaria spinosa
Beard-heath (Coast)	Leucopogon parviflora
Swamp Gum	Eucalyptus ovata
Blackwood	Acacia melanoxylon
Black Wattle	Acacia mollissima
Manna Gum	Eucalyptus viminalis
Common Reed	Phragmites sp.

Bird List of Tower Hill Reserve:

As observed under extremely adverse conditions.

Emu	Dromaius novae-hollandiae
Brown Quail	Synoicus australia
Eastern Swamp-hen	Porphyrio melanotus
Hoary-headed Grebe	Podiceps poliocephalus
Silver Gull	Larus novae-hollandiae
Spur-winged Plover	Lobibyx novae-hollandiae
Royal Spoonbill	Platalea regia
White-faced Heron	Ardea novae-hollandiae
Black Swan	Cygnus atratus
Mountain Duck	Tadorna tadornoides
Nankeen Kestrel	Falco cenchroides
Welcome Swallow	Hirundo neoxena
Grey Fantail	Rhipidura fuliginosa
Flame Robin	Petroica phoenicea
White-fronted Chat	Epthianura albifrons
Striated Field-wren	Calamanthus fuliginosus
Little Grass-bird	Megalurus gramineus
Superb Blue-wren	Malurus cyaneus
Silvereye	Zosterops lateralis
Raven	Corvus coronoides

PORT FAIRY WEEK-END CAMP (Cont'd.)

White-backed Magpie	Gymnorhina hypoleuca
Goldfinch	Carduelis carduelis
House Sparrow	Passer domesticus
Starling	Sturnus vulgaris

Personnel who attended the Port Fairy Camp-out:

Mr. Owen Andrews,
Miss Mary Arthur,
Miss Mary Brownhill,
Mr. Phillip Campbell,
Mr. Arthur Cahpman,
Mr. Harry Dunne,
Jeffrey Dunne,
Mr. Bob Fisher
Mr. Geoff Gayner,
Mr. & Mrs. F. Grueber,
Miss Helen Grueber,
Miss Rosemary Grueber,
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Miss Molly Martin,
Mr. Geoff Mathison,
Mr. Trevor Pescott,
Miss Elsie Poole,
Miss Florrie Poole,
Miss Frances Poole,
Mrs. Betty Quirk,
Miss Leila Ramsay,
Mrs. Lesley Rowe
& Julia (emu),
Mrs. C. Thewlis,
Mr & Mrs. L. Vincent,
Don Vincent,
Ken Vincent,
Mr. & Mrs. J. Wheeler,
Mrs. Ron Wood,
Mr. Ian Woodland
Mrs. Edna Yeoman.

Acknowledgement:
Our thanks to Miss Gracie Bowker for banding instruction and assistance. Our thanks also to Fisheries and Wildlife Officer, Mr. Gavin Cerini for guiding us at Tower Hill State Game Reserve.

* * * * *

Subscriptions are now due and payable to -

Hon. Treasurer,
Mr. E.G. Errey,
3 Leonard Street,
Belmont, 3216.

* * * * *

AT RANDOM

NANKEEN NIGHT HERON ROOKERY ENLARGING - by Jack Wheeler.

It was in February of 1963 that confirmation of Nankeen Night-herons nesting at Queens Park (Geelong) was established. On examination of three groups of Mediterranean Stone Pines (Pinus pinea) situated within the Queens Park golf course towards the western section of the Park, four nests in occupation were examined. Their contents were as follows:

"A" nest - 3 young, one of which was a weakling and survival doubtful. One was banded 110-33107.
"B" nest - 2 young one of which was dead. Surviving young of approx. 3 weeks was banded 110-33108.
"C" nest - One young - dead.
"D" nest - 3 well feathered young beside but not occupying nest.

At least fifteen adult birds circled the nest trees during visit. Other trees contained both well feathered young in immature plumage and adults in breeding plumage with distinctive plumes. Strength of rookery was estimated at about forty birds.

Each year since 1963, breeding has taken place but it was not until two years ago that an extension of the rookery was noticed, firstly to four groups of pines, and last season, 1969/70, an extension was made to six groups of pines. Only the one species of pine tree mentioned has so far been used, but the supply, in that region, of Mediterranean Pines has run out and it will be watched with interest to see if breeding will eventually spread to other pine species in the immediate locality

This last season has to date been their best effort when 21 nests were in occupation and mortality was not as high as other seasons. Fish submitted for identification, as being fed to chicks has been identified as elvers and carp. At stages when the young were large and demanding more regular feeding, parent birds changed their tactics to day feeding as was evident by the numbers frequenting the swamp at contraversial Hargreaves Paddock at Newtown. There was frequent movement of these birds between Hargreaves Paddock and Queens Park, another important reason why this swamp must be preserved.

ANNOUNCEMENT OF TWO IMPORTANT DISTRICT RESERVATIONS - by J. Wheeler

The recent announcement by the Minister of Forests, the Hon. E.R. Meagher, of two new Nature Reserves within the Geelong region is indeed a most welcome one.

The first one, to be known as Angahook Forest Park near Aireys Inlet is of 7,000 acres and will give permanent preservation to some of our best wildflower, orchid and bird habitat in the eastern Otways and could be the follow-up of more reservations within that most important area. The ideal would have been 14,000 acres but with permanent forest land bordering to the west, the Authorities may at some later date grant increased areas. To the east there are two areas of Crown Lands which could be ideally added to Angahook, and this Club is very interested in submitting a case for same. The Forests Commission has invited this Club to carry out a survey of fauna and flora within Angahook and this we are very happy to do.

The second reservation is that of 550 acres to be known as the Bannockburn Fauna and Flora Reserve, situated west of Bannockburn on the Shelford Road. The Geelong S.G.A.P. made application for this reservation and was strongly supported by this Club.

MT. MACEDON FOREST PARK:

Members who have visited Mt. Macedon with this Club's weekend excursions in 1968 and 1969, will be interested to learn that the whole of the Reserved Forest of Mt. Macedon range is to be permanently preserved and covers an area of approximately 3,200 acres.

* * * * *

LET'S STOP AND LOOK

By L. Elms

Why is it that we hasten past that tree, while round its base
There's wondrous things to see if we but look.

All very well to take its photograph, and then determine its
Official Name to enter in some book.

Instead of rushing on to parts beyond, to look for nests
And trees and birds and such,
Some much rewarding time could well be spent around that tree.

The wealth of various things that Nature sent for us to see
should not be missed. There's ants and butterflies
And spiders webs, and seeds from shrubs, and gum shed from the tree.

There's grubs and beetles down there by the score, as well as
Fungus growths across the floor of mulch that feeds that tree.

That large dead branch protruding overhead has bees inside -
They can be seen in flight out to the pollen flowers,
Then back again to their strange home, to put more honey
In the honeycomb.

So much is missed because we rush to see the common things
Far on beyond that tree.
Let's stop a while to study now and then the smaller details
Which are to be found if we but take the time to search around.

* * * * *

JUNIOR PAGES

In "Geelong Naturalist" for February 1970, there were three photographs shown on the last page, each one representing some stage in the development of a mistletoe plant.

First there was the flower, with long petals joined for most of their length to form a tube; this shape is typical of mistletoe flowers, although most of the mistletoes we see in the Geelong district have flowers which hang down rather than point up.

This is the flower of the Harlequin Mistletoe, and it is a very vivid red and green in color.

When the flowers die off, seeds develop; more correctly they should be called "fruit", for the seed itself is covered with a layer of sweet but sticky flesh which is in turn covered with a firm skin.

Once the fruit are ripe, they become the main food of the Mistletoebird; the second photograph shows the female bird.

The Mistletoebirds take the fruit from inside the skin by nipping off the end of the fruit with their beaks, then squeezing the seed and its surrounding flesh into their mouths - much as you do when you cut the end off an orange and squeeze the juice into your mouth.

When the bird has digested the flesh, the seed is passed out with the droppings, and usually falls onto a branch below.

Here the seed takes root - and this is what is happening in the third photograph.

Since Mistletoes grow on the branch of another tree and not in the ground, their roots have to burrow into the branch instead of the ground.

The two seeds in the photograph have just sent the root with a

JUNIOR PAGES (Cont'd.)

large suction-type cap on the end curving over the branch; here it attaches itself firmly, and begins to grow as a parasite.

A parasite is something which takes its food from another creature - and mistletoe takes its sap from the branch of another tree.

This, then, is briefly the life story of a Mistletoe - the flower, the fruit that follow are eaten by the Mistletoebird, then the seeds grow on another plant to form another mistletoe clump ready to flower and repeat the cycle.

There are many parasites in nature, but mistletoes are the best known of all.

* * * * *

Do you remember Benjamin, the fox that came to several of our meetings?

"Benj" has gone to live on a large farm where she will share a large, spacious enclosure, with another fox for company.

Far better for her to live in the country, for foxes are not town dogs; at her new home, she will have plenty of space to move around, and her new guardian is well accustomed to looking after animals of all kinds.

Foxes do a great deal of harm to our native birds and animals, and on many occasions we watched Benj. as she eyed the sparrows or even magpies in our garden.

No doubt she was wishing she could have a try to catch these tasty-looking birds.

Even in her new enclosure, she gazed whistfully at a pet Galah in the next cage; and no doubt she would soon notice the fowls and ducks nearby.

We are looking forward to hearing more about her in her new home.

* * * * *

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Published by
THE GEELONG FIELD NATURALISTS CLUB
Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in the month, at 8 p.m. in the McPhillimy Hall, St. George's Church, Latrobe Terrace, Geelong

Visitors Welcome

All papers submitted for publication in this journal should be sent to the Hon. Editor

Vol. 7 No. 3 NOVEMBER, 1970 Price 25c

GEELONG NATURALIST

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Journal of the Geelong Field Naturalists Club

Registered at G.P.O. Melbourne for transmission by post as a periodical

Correa backhousiana at Parker River

Hon. Editor: Trevor Pescott

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

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Subscription Rates are: (Due on 1st April)	Per Annum
Adult Membership	$2.00
Joint Membership	$3.00
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Subscription to Magazine	$1.00

COVER PHOTOGRAPH:

Correa backhousiana at Parker River

By Trevor Pescott

GEELONG NATURALIST

EDITORIAL

Vol.7. No.3. November 1970

Perhaps each group of naturalists "adopts" as its special province an area of land which it studies and for which it attempts to obtain adequate conservation measures.

Our Geelong Club, the largest "country" Field Naturalists Club in Victoria, has become involved in field studies in the Otway Ranges, and must soon begin a campaign to receive support for an adequate conservation program.

Within the Otways are some 250,000 acres of Reserved Forest under the control of the Forests Commission of Victoria, some 100,000 acres of Crown Land, and perhaps an area equal to the sum of these in private property. Reserves in the Otways, apart from a number of small roadside and scenic reserves, and various watershed areas which are reasonably safe from exploitation, consist of a 7,200 acre Forest Park (Angahook) at Airey's Inlet.

This means that to attain even a nominal percentage of the Otways as a reserve, we need urgently a large block of land as a permanent park; by large, an area of about 30,000 acres is meant. Smaller areas must in the long term be inadequate, for these Parks are not a thing of this decade, but something able to withstand the enormous population growths envisaged within the foreseeable future.

So to give naturalists in Geelong a clear picture of the Otways, at least in rather brief cross-sectional form, and to stimulate an increase in Otways awareness, the Committee of the G.F.N.C. has agreed to devoting this issue of Geelong Naturalist to exclusively Otways material. Contrary to normal policy, perhaps, much of the material has been solicited by the Editor from very busy people. And also contrary to normal proceedings, some previously submitted material not pertaining to the Otways, has been held over until the February issue.

We hope you enjoy this, our Otways Special.

TREVOR PESCOTT, Hon. Editor.

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION

PART I:

By Geoff Carr

Local naturalists have long shown interest in the Otway Ranges, particularly the near Otways around Anglesea. The Cape Otway - Parker River area claimed attention also, but until late in 1969 no systematic work had been conducted in the area. Since December 1969 about four organised weekends have been spent here in an effort to glean some information about the natural history of the area. These field trips have been in the nature of surveys to provide checklists of the birds, mammal life and plants.

Such a short time spent in the area has made detailed examination impossible, but comprehensive pictures have been built up of the flora and fauna. Weekends have been spent at the mouth of the Parker River-Cape Otway area, several along the Parker Ridge Road-Blanket Bay area as well as at Maits Rest.

Investigating the plant life and compiling a species list involved collecting and noting in all areas visited so that a fairly comprehensive (if incomplete) list has been made. Vegetation zones or associations have also been noted and defined wherever possible.

This article will attempt to describe the main vegetation types occurring in the area, and with an accompanying list of all plants recorded, it is hoped that anyone visiting the area may be better able to understand its vegetation.

From the information recorded it is clear that the area is botanically significant, and further work in the field will magnify this. The noteable plants and communities will be discussed below, in their respective sections. Statements and opinions are based on present knowledge of the area. The only equipment used in the field was a notebook,and notes, particularly on plant distribution, are liable to be amended in the future; and as work progresses new plants will be continually added to the list.

The area encompassed by the Cape Otway to Blanket Bay coastal strip to the Ocean Road is a varied one with a number of different habitats. These are products of soil variation and rainfall.

The parent material of the greater Otways is sedimentary sandstone

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

of the Jurassic to Lower Cretaceous period. In the area in question this rises to a height of over 800 feet above sea level along the Parker Ridge. The sandstone falls towards the coast, and Blanket Bay cliffs of only a few feet are found, although they vary in height to south of the mouth of Parker River where they give way to dune limestone cliffs, outcrops, and stable dunes. At Cape Otway these cliffs rise to a height of nearly 300 feet.

Soils derived from the parent sandstone largely support forest type vegetation, whereas those of the sandy coastal zones support heathland, woodland , or natural or artificial grassland. Dunes at the Cape support native grass species.

The elevated areas receive abundant rains falling mainly between autumn and early summer. At the Cape Otway weather station rainfall averages 35 inches per annum, but rises to twice this figure on the Parker Ridge. A 70 inch rainfall is a high one, capable of supporting a luxuriant vegetation.

THE COASTAL STRIP

Calcareous cliffs at Cape Otway graduate to less precipitous slopes toward Crayfish Bay where stable dunes succeed. From just south of the mouth of Parker River, sandstone cliffs occur with frquent rock shelves abutting the ocean. These cliffs extend to Blanket Bay and beyond.

Vegetation along the coast is varied but with consistent dominant species.

At Cape Otway, massive cliffs rise sheer from a reef strewn sea to a height of 200 feet. These soft limestone rocks and dunes were formed in comparatively recent geological times when a receeding sea allowed windblown calcareous material to form these deposits.

Considerable influences of wind and wind borne salt operate at the Cape with an unchecked south-westerly wind system. In spite of this, mutually protected plants can attain a height of about 10 feet, the dominant species being Leucopogon parviflorus (Coast Beard-heath), Acacia longifolia v. sophorae (Coast Sallow-wattle), Leptospermum laevigatum (Coast Tea-tree), Myoporum insulare (Boobialla), Olearia axillaris (Daisy-bush), Helichrysum cinereum

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION(Cont'd.)

(Coast Everlasting), as the most abundant shrubby species. Acacia myrtifolia (Myrtle Wattle), Olearia glutinosa (Daisy-bush), Exocarpus syrticolus (Coast Ballart) are less abundant but locally common. The sub-shrubby Senecio ovaria (Coast Groundsel) is abundant. Acacia myrtifolia, Olearia glutinosa and Exocarpus syrticolus are the most interesting shrubs here. Myrtle wattle is a curious form with remarkably thick leaves and pods confined to the Cape, Olearia glutinosa is a showy species of limited distribution, and the Exocarpus a semi-parasite also is limited in distribution locally and has attractive fleshy fruits.

Several spontaneous exotics are found on the east side of the Cape on scree slopes, and these are the lime loving South African Boxthorn (Lycium ferocissimum), and a rare spontaneous occurrence of the garden Stock (Matthiola incana) of European origin. Both have escaped from the settlement on the cliff tops above. The stock grows on scree slopes and the very robust plants are showy in bloom with massed purple flowers.

Leucopogon parviflorus, Olearia axillaris, Helichrysum cinereum, and Myoporum insulare dominate the vegetation along the rest of the coast, but many other shrubby species occur there too.

Clearing has occurred from Pt. Franklin to Cape Otway of the woodland, and a farm exists at Crayfish Bay, but pastures are unimproved and used for grazing cattle which wander freely over a large area of pasture, woodland and dune. These cattle have altered the vegetation of the cliffs by trampling, causing erosion, and facilitating the spread of exotic weeds, very prevalent here. The Crayfish Bay settlement and its trappings, with human traffic, has also affected the vegetation for the worse, and the woodlands where cattle penetrate are also invaded with exotics. Squalid settlement at Blanket Bay has destroyed the appearance of this place, and exotic weeds flourish. Some unnecessary clearing of heathland has also taken place.

Other shrubby species along the coast include Bursaria spinosa (Sweet Bursaria) of the sandstone cliffs, Leptospermum pubescens (Woolly Tea-tree), confined to a small stand on moist cliffs below Parker Hill where two other noteable species occur. These are Hibbertia aspera (Guinea-flower), a rare species along this part of the coast which grows in tangled masses beneath the tea-tree, and Correa backhousiana. The small stand of Correa here is the only known occurrence in Victoria, and was discovered in December 1969. The shrubs grow just above the beach sands and flower profusely in autumn. Correa alba (White Correa) grows with its congener, but this is also frequent right along the coast.

Pultenaea canaliculata (Bush-pea) is restricted to a small area on cliffs just east of the Cape and is a comparatively rare coastal species. Calocephalus brownii (Cushion Bush), typical of the coastal vegetation is frequent and conspicuous with silvery foliage. At Crayfish Bay, Pimelea glauca (Smooth Rice-flower) is showy along the cliffs with the pink flowered legume Lotus australis and Acrotriche affinis (Honey-pots) a prostrate cliff dweller. Pultenaea tenuifolia (Slender Bush-pea) is also found here and at Blanket Bay. Herbs at the Cape include Stackhousia spathulata (Coast Stackhousia), and Cynoglossum australe (Austral Hounds-tongue), both locally frequent. A very robust luxuriant form of Pelargonium australe (Austral Storks-bill) grows on dunes near Pt. Franklin. Other shrubs and herbs from the heathlands make an appearance on the sandstone cliffs such as Goodenia ovata (Hop Goodenia).

Casuarina stricta (Drooping Sheoak) must be mentioned as a tree common along the coastal cliffs and a little way inland from the Cape to Blanket Bay where it forms the most extensive stands. Pomaderris oraria (Coast Pomaderris) is a feature of the slopes of Parker Hill, but has not been noted elsewhere. Clematis microphylla (Small-leaf Clematis) is occasional along the coast.

Very interesting littoral and cliff soaks are found from the Cape to Crayfish Bay, and these have a distinct range of species, some not encountered elsewhere. The curious soak near the lighthouse supports a very dense growth of cushion like Juncus spp. (Rushes) chief of which is J. pauciflorus (Loose-flower Rush). The littoral soaks just above the beach sands at Crayfish Bay are drainage points of the seaward sloping coastal pastures. Sedges such as Scirpus cernuus (Nodding Club-rush) and S. americanus (American Club-rush), Carex iynx, with the dicotyledons Samolus repens (Brookweed), Cotula coronopifolia (Water Buttons), mosses and algae comprise these interesting communities. Sedge flora of the area is quite rich and along the coastal sands at the mouth of Parker River and Blanket Bay Carex pumila (Strand Sedge)

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

is abundant. Stable dunes along the coast often support a vegetation of Festuca littoralis (Coast Fescue).

COASTAL WOODLANDS AND PASTURES

Coastal woodlands and pastures occupy a strip from Cape Otway to the mouth of Parker River. The woodlands have, and still are being cleared, and the rough pastures created are used to graze cattle which are free ranging throughout a large area. The animals have exerted an important influence over the plant life particularly in that they have facilitated the spread of weeds which are abundant in many places. Some species are closely integrated with native species in the pastures and woodland.

A strip of grassy dune country probably divided the woodland and coast, but clearing of the trees makes the original woodland boundaries difficult to define in some spots.

The woodland is dominated by Eucalyptus viminalis (Manna Gum), with Euc. obliqua (Messmate) mixing towards the inland boundaries. The trees decrease in size towards the coast and severe wind planing effects are obvious. Some are prevented from rising above the brow of the undulating sand hills because of wind. At a maximum, trees in the woodland reach heights of not more than 60 feet.

The areas that have been cleared may be thickly covered in Bracken (Pteridium esculentum) or Poa australis (Tussock Grass) and Lomandra longifolia (Spiny-headed Mat-rush) may be important. Weeds are closely integrated and include Hypochaeris radicata (Flat Weed), Arctotheca calendula (Cape Weed), Sporobolus africanus (Rat-tail Grass) and Lagurus ovatus (Hares Tail). The last species is particularly abundant along the coastal dunes, cliffs, and roadsides. Other grass such as Lolium perenne (Perennial Rye-grass) are frequent in the fenced pastures at Crayfish Bay which are part of a farm of sorts.

Away from the coast, the woodlands may graduate to heathland or heath woodland as on the lower Parker River. Some of this has been cleared and bracken (Pteridium esculentum) is now the absolute dominant. The woodland may have a shrubby understory, often dense because of fires and here Acacia verticilata (Prickly

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

Moses), Leptospermum juniperinum (Prickly Tea-tree), Pultenaea daphnoides (Large-leaf Bush-pea), and Busaria spinosa (Sweet Bursaria) are dominant. Lesser shrubs particularly legumes are common, and many herbs including some species of orchids of which Acianthus spp. (Gnat and Mosquito Orchid) and Chiloglottis reflexa (Autumn Bird-orchid) are commonest. The heath woodland relieved by the valley of the Parker River in its lower section gives way to forest and heathland or forest at its other boundaries. A mixture of plant species from each vegetation type is found in these intermediate zones.

WET HEATHLAND

A fascinating association of plants exists on sandy soils lying roughly between the Parker River valley, Blanket Bay Creek and the Parker (Ridge) Road. Because of its elevated position, the area receives abundant rains, and this in combination with the sandy soil produces a wet heathland vegetation. The area is comparatively flat or plateau like.

Myrtaceous plants dominate the vegetation with Leptospermum juniperinum (Prickly Tea-tree) co-dominant with Melaleuca squarrosa (Scented Paper-bark). These form extremely dense scrub with an overstory of Eucalypts, dense in places, and sometimes discontinuous. The principle species is Eucalyptus kitsoniana (Bog Gum or Gippsland Mallee) which form pure stands or is associated with E. ovata (Swamp Gum), E. baxteri (Brown Stringybark), or E. gonicalyx (Long-leaf Box). The latter species is much less common than the others, but all may form pure stands with Leptospermum and Melaleuca as an understory. Eucalyptus kitsoniana is a very interesting species; this occurrence is the westernmost of its range, and here too it attains its best development. Blakely in "A Key to the Eucalypts" describes it as a dwarf tree to 30 feet in height, but in the Otways the species reaches heights of up to about 80 feet growing in dense stands. On more open sites it grows about 20-30 feet. E. ovata also reaches maximum development growing to about 80 feet also, unusually large (at least in Victoria) for this tree.

On some sites the Bog Gums do not have a shrubby understory of Leptospermum and Melaleuca, but Gahnia clarkei (Tall Saw-sedge) and Blechnum procerum (Hard Water-fern) grow profusely. Such

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

communities seem to occur on sloping sites at the fringe of the wet heathland association at the heads of creeks which drain the elevated heathland. The trees here present a striking appearance with smooth tan coloured bark contrasting with the vivd green ferns and sedges. Tree-ferns (Cyathea australis) may grow in the creeks.

The Leptospermum and Melaleuca beneath the forest Eucalypts, or in pure stands, also attain maximum developments far exceeding the usual. Beneath the gums the former can grow to 50 feet and the latter to 30 feet, or in pure scrub to 20 feet. Extensive masses of Bauera rubioides (Wiry Dog-rose) and Bossiaea cinerea (Showy Bossiaea) are usual beneath Leptospermum and Melaleuca or Gleichenia spp. (Coral-ferns). All of these can grow to 10 feet and are often extremely dense. Gahnia siberiana (Red-fruit Saw-sedge) is common also, its long dark inflorescences emerging from the scrub cover where it is lower. Leucopogon lanceolata (Beard-heath), Banksia marginata (Silver Banksia), Dillwynia glaberrima (Smooth Parrot-pea), Sprengelia incarnata (Swamp Heath), and three other heaths, Epacris lanuginosa (Woolly Heath), E. obtusifolia (Blunt-leaf Heath) and E. impressa (Common Heath) are frequent shrubs, but usually do not grow as high as the dominant scrub.

A ground flora of Calophorus lateriflorus (Tassel Rope-rush), Ampaera xiphoclada (Broom Spurge), and Selaginella uliginosa (Swamp Selaginella) with other species at roadsides where light penetrates, provides a continuous ground cover. Mosses are important here also. Sphagnum logs are apparently rare and Drosera binata (Forked Sundew) grows in these sites. Goodenia ovata (Hop Goodenia) is co-dominant with Tetrarrhena juncea (Forest Wire-grass) on recently fired sites beneath an overstory of Eucalyptus ovata. This type of vegetation occurs on the fringes of some of the wet heathland.

HEATHLAND

Drier heathlands occupy extensive areas, the largest of which is located from Blanket Bay southwards with a gentle slope towards the sea. These areas are comparatively rich in plant species. Open or "short" heath is interspersed with small stands of Eucalypts forming heath woodland. Forest species occur in gullies where short streams drain the slopes.

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

Eucalyptus baxteris (Brown Stringybark), and E. obliqua (Messmate) are the tree species here, and a very dense scrub up to 5 feet is composed of Leptospermum juniperinium (Prickly Tea-tree), Casuarina paludosa (Swamp Sheoak), Acacia verticillata (Prickly Moses), Melaleuca squarrosa (Scented Paper-bark), Hakea ulicina (Furze Hakea), Pultenaea daphnoides (Large-leaf Bush-pea), Banksia marginata (Silver Banksia), Leucopogon lanceolata (Beard-Heath), Dillwynia glaberrima (Smooth Parrot-pea), and Xanthorrhoea australis (Austral Grass-tree). Sedges such as Gahnia radula (Common Saw-sedge) is plentiful, and many lesser shrubs are found (see plant list).
At the coast on sandstone cliffs some of these heathland plants are found with typical maritime species.

(To be concluded.)

* * * *

BLACK SNAIL OF THE OTWAYS - VICTAPHANTA COMPACTA

By Frances Poole

On one of the campouts in the Otways we came across several black snails, these differed from the ones that had been found at our Marysville weekend, the foot frill being black or very dark grey, whereas the Marysville snails had a bright orange foot-frill; in all other respects they seemed to be the same.

This called for some research to be done, and the name of the Otways snail is "Victaphanta compacta", the shell slightly smaller, but one would need the two shells to see any difference. The areas they are found in do not overlap in any way. The main food sources of these carnivorus snails are earthworms and other snails; they live in the rain forests and can usually be found under fallen logs and leaves.

Reference: The Victorian Naturalist Vol.87 No.9.

* * * *

FERNS OF THE DISTRICT - PART 3

By E.G. Errey

OTWAY FERNS

Plant habitats in the Otway Ranges include widely varying types, from coastal cliffs and heathlands swept by salt-laden winds to dense rain-forest areas where neither wind nor sun can penetrate.

It naturally follows that plant life in great variety can be found there. Even single species sometimes exhibit remarkable differences within a small area. For example, the Red Ironbark, that grows as a substantial forest tree on the hills behind Airey's Inlet, is kept down almost to shrub proportions where storms and salt spray exert their influence close to the exposed shore line.

Fern species, too, vary in size and other characteristics according to whether their environment is congenial or harsh, and this has sometimes to be considered when trying to establish their identity.

Ferns in general are happiest where conditions are damp, cool and shaded, and there are extensive areas of this type within the Otway forests. Some species, though, and Bracken Fern is not the only one, prefer exposed, often rather dry territory, where they can develop without too much competition.

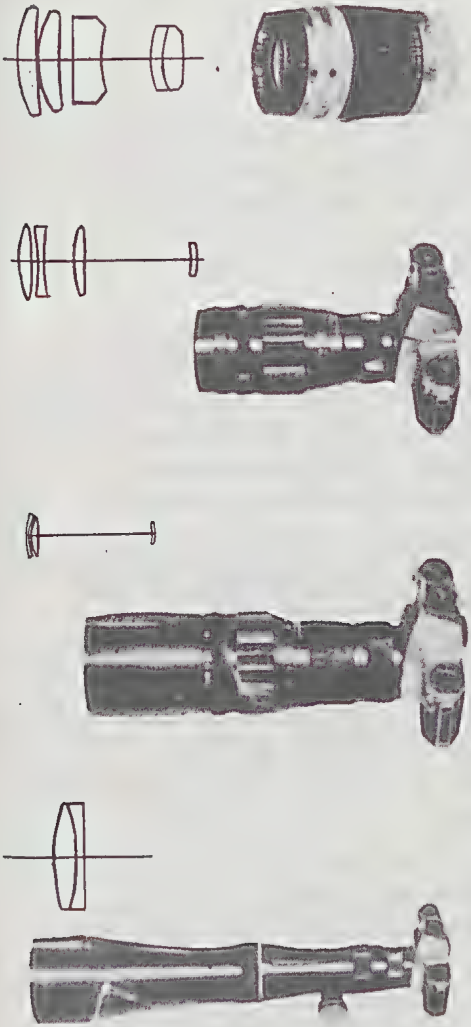
PLANTS AS HOSTS

Maidenhair, so popular as a pot plant and a favorite in floral sprays, likes a cool situation, damp rather than wet, but not in heavy shade. Other equally dainty ferns are epiphytic, revelling in deep shade on fallen logs, tree-fern trunks or moss-covered butts of Myrtle Beech.

Such epiphytes are not parasitic - that is, they do not rob the host plant of nourishment. Their rhizomes and roots can easily make their way through the moist fibrous or rotted material without disturbance from ground-foraging birds, bandicoots and such-like.

But it is not only microscopic fern spores that lodge and develop in tree-fern fibre. Often blackwood, coprosma, hazel and pittosporum seeds germinate there, and from a position perhaps

PHOTOGRAPHERS!



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FERNS OF THE DISTRICT (Cont'd.)

ten or fifteen feet above ground level, send roots down through the outer layers of a fern trunk, eventually to choke out the fern and unite to form a fluted trunk supporting the tree high above.

Even Myrtle Beeches, hosts to numerous fern species in the dripping depths of the forest, sometimes claim repayment. In the Calder River district we found a stout tree-fern still thriving although two stripling Beeches, one about four inches in diameter and a good ten feet up, were firmly established upon its trunk.

THE LARGER FERNS

The first ferns to attract attention along the Otway roads are the tree-ferns, of which there are several species. The most prominent will be the Rough Tree-fern, for this is the hardiest, growing in the open forest and often surviving on exposed hillsides after other vegetation has been removed. Its "roughness" is apparent when the rasp-like butts of the fronds are handled.

In contrast are the frond-butts of the Soft Tree-fern, which have a covering of soft reddish-brown hair, a feature also of the uncurling fronds. The outside of a Soft Tree-fern trunk is a matted mass of fibrous rootlets adding greatly to the diameter near the ground. This forms an ideal situation for the growth of epiphytic ferns, mosses and lichens, especially as this species favours the damper, more sheltered parts of the gullies. The Rough Tree-fern on the other hand, has a harder trunk with more evidence of old frond butts remaining.

Further differences appear when the underside of matured fronds is examined for the spore cases. These are green when immature and rusty brown when the spores are ripe. Soft Tree-fern bears its spore cases along the margins of the pinnules, while Rough Tree-fern and its allies have theirs in parallel rows on either side of the midribs of the pinnules. This difference shows the two to be in separate families. The former is a Dicksonia and the latter a Cyathea.

Two other Cyatheas grow in the Otways though they are both rare in comparison with the tree-ferns already mentioned. One is the Slender Tree-fern, whose tall slim stem towers to thirty or

FERNS OF THE DISTRICT (Cont'd.)

forty feet though only about four inches thick. The second is the very rare Skirted Tree-fern, the only fern restricted to Victoria, where it is confined to a few districts though common enough in one or two Gippsland jungle spots. Instead of shedding its old fronds, this fern holds them as a voluminous skirt clothing most of its trunk.

Though not a tree-fern, King Fern has a broad massive butt from which several clumps of long fronds may arise. The fronds are only twice divided as against three times in tree-ferns, and the spore cases when present cover the underside of the lower pinnae, instead of being arranged in regular rows.

SHIELD FERNS

Mother Shield Fern has the appearance of a small tree-fern, as it grows a trunk up to a foot high, and bears fronds three to four feet long. This species, and one of the Spleenworts, have the peculiarity of producing small bulbils in the axils towards the ends of mature fronds. These develop into new fern plants, sending out tiny fronds, and, where resting on the ground, growing roots much as a strawberry runner does. This accounts for the common name "Mother" applied to these two species. The name Shield Fern comes from a shield-like covering to the spore cases, which shrivels as the spores ripen. This shield can clearly be seen with the aid of a small hand lens. (There are, however, other genera with a membrane or indusium covering the spore cases.)

Two other members of this group, Shiny and Leathery Shield Ferns, are common in the Otways, the second one being epiphytic.

WATER FERN GROUP

The Blechnums or Water Ferns make up Victoria's largest genus, with seven species common in the Otways. Several of these are frequently grown in ferneries or gardens, and some flourish in shady spots even without the usual gully dampness.

These plants, except for one species, Gristle Fern, are peculiar in having two types of frond, the spores being produced on separate fertile fronds, of which the pinnae are much narrower than those of

FERNS OF THE DISTRICT (Cont'd.)

the barren fronds. Occasionally one finds a compromise, half of the frond being of each type, giving it a blighted appearance. Gristle Ferns, Hard and Soft Water Ferns and the Fishbone Water Fern are the most common species of this group.

Closely related to the Water Ferns are the Rasp Ferns, of which two species are found in the Otway Ranges.

BRACKEN AND ITS ALLIES

Bracken Fern is too well known to need description and it is the only species not blessed with official protection. There are, however, several related but less troublesome genera that may be overlooked in the belief they are Common Bracken. Some are Ground Ferns, and are often found growing with Bracken in relatively open areas. Common Ground Fern, also known as False Bracken or as Rainbow Fern, is yellowish green in foliage and much softer in texture than the pest species.

Another fern, not so closely related, is Tender Brake (or Tender Bracken), found as its name would imply, in more sheltered places, under creek banks for example, where moisture is abundant and drying winds cannot reach.

Often growing with Ground Ferns and Bracken in rather wet spots is Bat's-wing Fern, easily recognised by its shape and bluish-green fronds.

FAN AND CORAL FERNS

Two very attractive ferns, with a distinctive frond pattern are the Coral Ferns and Fan Ferns. With these the frond divides at a V-shaped fork into two secondary pinnae which in turn fork into tertiary pinnae, all three sections carrying pinnules which when mature bear the spore cases. In the Coral Ferns the pinnules are further divided into lobes each with a group of spore cases. Fan Fern pinnules are entire, the spore cases lying in rows on either side of the vein. The common Otway species is Silky Fan Fern, with pinnules set at a sharp angle to the rachis.

The branching nature of these ferns tends to cause rather a tangle, Scrambling Coral Fern in particular twining amongst scrub sometimes to ten feet or higher.

FERNS OF THE DISTRICT (Cont'd.)

A FEW TECHNICALITIES

Perhaps this would be an appropriate stage to introduce certain technicalities that have been avoided too long. Because ferns are different from flowering plants in so many aspects, they require an additional set of botanical terms to cope with these differences. Most of these can best be explained by means of sketches, but for the spore system an explanatory note seems necessary.

I have been using the term "spore cases" rather loosely in referring to the green or brown patches on the back of fronds. These patches, sometimes circular, sometimes oval or linear, are really groups of spore cases, which when magnified look like clusters of insect eggs. Each cluster is known as a "sorus", for which the plural is "sori". A single spore case is a "sporangium", (plural "sporangia"), and contains numerous microscopic spores.

On some species, Shield Fern for example, the sori are protected by an "indusium" of some form. This may be a simple membraneous covering of varying shape, or it may be a pouch-like receptacle.

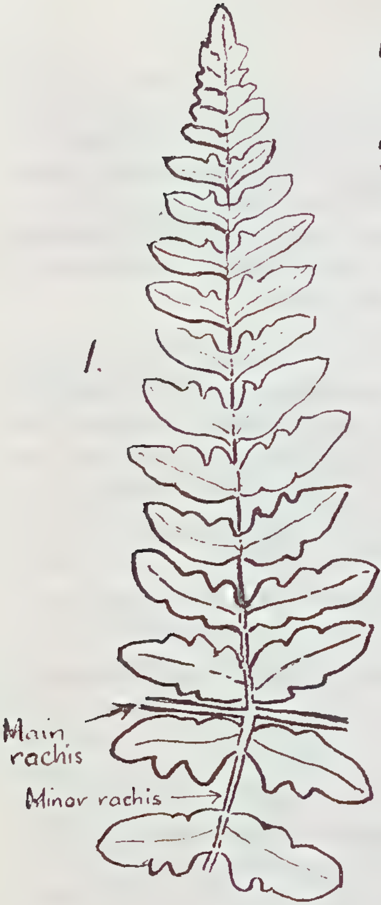
EPIPHYTES

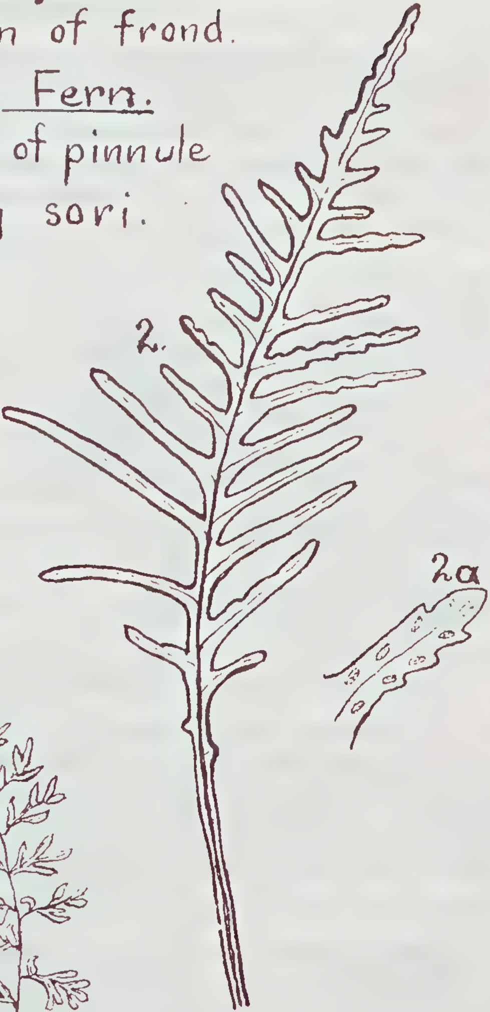
Along the dimmer and damper gully floors, where only filtered sunlight penetrates and the atmosphere is always moist, we find a flora very different from that of raodside and open woodland. These are the epiphytic plants briefly referred to earlier, and include, beside ferns in great variety, many species of moss, fungi, lichens and even orchids.

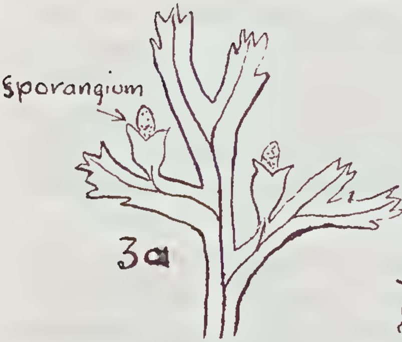
Not all such ferns are tiny. Some have fronds up to three or four feet in length. One of these is Mother Spleenwort, mentioned before as a species that reproduces by bulbils on the older fronds as well as by spores. This fern has long been popular as a pot-plant. The name Spleenwort comes from an old belief in the medicinal properties of the family in the treatment of diseases of the spleen.

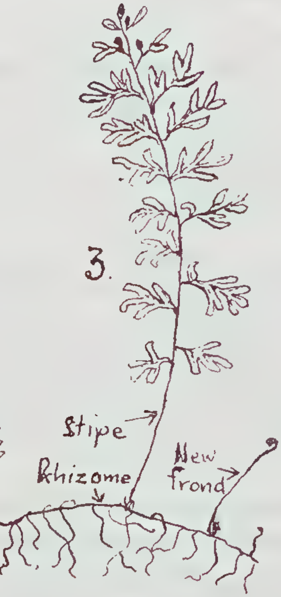
Another of the same genus, but much smaller, is the Necklace Fern, sometimes found as an epiphyte but more often growing among rocks. This species has weak trailing fronds extending into a tail which frequently takes root. Pinnules are fan-shaped, rather like those

1. Bat's-wing Fern
Section of frond.
2 Gipsy Fern.
2a Back of pinnule showing sori.



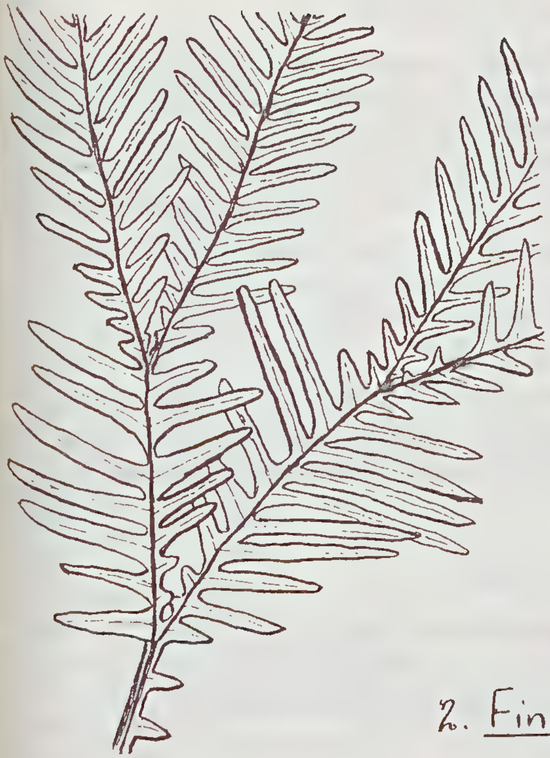




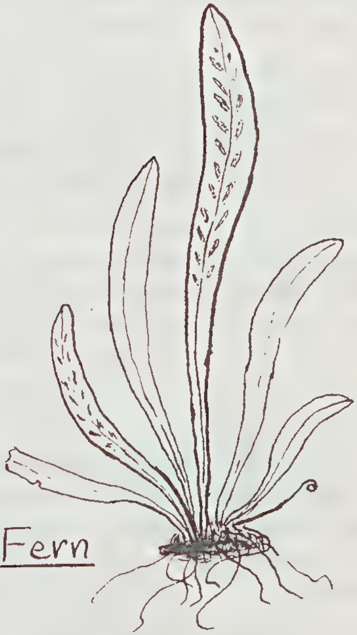


3. Common Filmy Fern
3a. Tip of frond × 4

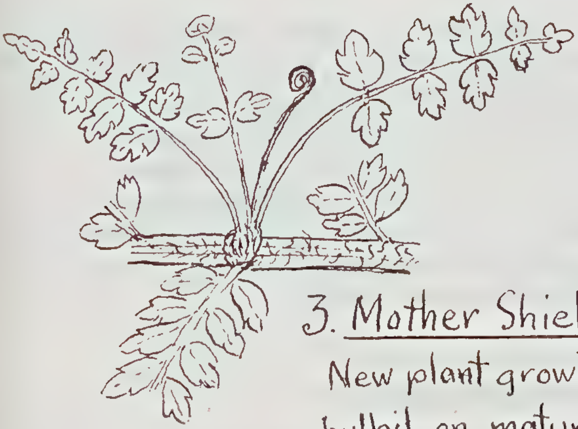
E.G.E. 1970.



1. Silky Fan Fern
showing forking pattern.

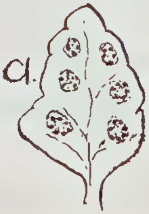


2. Finger Fern



3. Mother Shield Fern.
New plant growing from
bulbil on mature frond

3a.



3a. Sori on back of pinnule.

E.G.E. 1970.

FERNS OF THE DISTRICT (Cont'd.)

of Maidenhair, but sori are not on the edges.

Leathery Shield Fern is another of the larger varieties with fronds a foot or more long. It is found mainly on trunks of Soft Tree-ferns, whose fibrous butts give foothold to so many of these off-the-ground species. Distinguishing features are brown papery scales on the main rachis, wings on minor ones, and raised midribs.

Gipsy Fern is a smaller plant, rather stiff and leathery to feel, and with fronds that vary considerably in size and divisions. But the pinnae bases continue down the stem, forming a distinctive wing on each side of the stipe.

Much easier to recognise is the Finger Fern, for the fronds appear as plain light green fingers poking out from among darker feathery ferns and mosses: Narrow sori are set at a sharp angle on each side of the midrib.

FILMY FERNS

This is Fernland in miniature, where dainty fronds only two or three inches long, often less, stand out bravely in a world of their own, among mosses, lichens, clubmosses and allied plants, forming a green curtain, dense yet lacey, on saturated logs and fern trunks.

Filmy is an apt title, for the translucent, almost transparent, frond sections are only a single cell thick. Identification is not easy. Four species are listed for the Otway region. We collected five or six that we took to be Filmy Ferns, but whether we have added to the official list or have gathered Bristle Ferns, Clubmoss, Fork Ferns and other similar plants in our collection remains to be seen. Of one thing we are certain. There is a fascination in this green fairyland that will provide many hours of enjoyable study in the years ahead.

Reference List of Common and Botanical Names.

Red Ironbark	Eucalyptus sideroxylon
Bracken Fern	Pteridium esculentum
Maidenhair	Adiantum aethiopicum
Myrtle Beech	Nothophagus cunninghamii

FERNS OF THE DISTRICT (Cont'd.)

Blackwood	Acacia melanoxylon
Coprosma	Coprosma species
Hazel	Pomaderris aspera
Pittosporum	Pittosporum species
Rough Tree-fern	Cyathea australis
Soft Tree-fern	Dicksonia antarctica
Slender Tree-fern	Cyathea cunninghamii
Skirted Tree-fern	" marcescens
King Fern	Todea barbara
Mother Shield Fern	Polystichum proliferum
Spleenworts	Asplenium species
Shiny Shield Fern	Lastreopsis shepherdii
Leathery Shield Fern	Rumohra adiantiformis
Gristle Fern	Blechnum cartilagineum
Hard Water Fern	" procerum
Soft Water Fern	" minus
Fishbone Water Fern	" nudum
Rasp Ferns	Doodia species
Common Ground Fern, False Bracken or Rainbow Fern	Culcita dubia
Tender Brake	Pteris tremula
Bat's-wing Fern	Histiopteris incisa
Coral Ferns	Gleichenia species
Fan Ferns	Sticherus species
Silky Fan Fern	Sticherus tener
Scrambling Coral Fern	Gleichenia microphylla
Mother Spleenwort	Asplenium bulbiferum
Necklace Fern	" flabellifolium
Leathery Shield Fern	Rumohra adiantiformis
Gipsy Fern	Ctenopteris heterophylla
Finger Fern	Grammitis billardieri
Filmy Ferns	Hymenophyllum and Mecodium species

* * * * * *

OTWAY'S ERA - BIRDS OF YESTERDAY AND TODAY

By Jack Wheeler

The late Sir Charles E. Belcher, a noted bird enthusiast of the Geelong district during the late 1890s, and the early years of this century, had an outstanding knowledge of local birdlife and it was indeed fortunate that he left us his legacy of this knowledge, by publishing in 1914 'The Birds of the District of Geelong, Australia'.

The information as published 56 years ago is still very much alive, and naturalists of today still regard it as a classic. It is no way scientific and its simple references are a guide to the unskilled as it is also to the skilled.

Sir Charles did his bird observing the hard way, by foot or by the aid of a horse he called "Ginger", and his closest friends, N.M. Freeman and B.E. Purnell, often accompanied him.

Of the 244 species commented upon in his book, 93 are specifically mentioned as occurring in some part of the Otway Ranges, and the purpose of this article is to draw a comparison between the "Belcher" era, and as we know it today.

Twenty seven species are commented upon - the first name is the common vernacular as used by Sir Charles, then follows the present day vernacular (if any change), the scientific name; then details from Sir Charles's book and particular comment by Sir Charles is underlined - and finally my own comment in brackets.

The order of listing is followed as in the book and not in strict checklist order.

Painted Quail: Turnix varia. Referred to as the 'bush' quail and as being recorded in the Airey's Inlet area. (It is still reasonably common in the Airey's Inlet district, particularly that type of habitat which exists in the recently proclaimed Angahook Forest Park.)

Peaceful Dove: Geopelia placida. A pair are listed as being seen at Airey's Inlet in 1904. (During recent years odd sightings have been made at the You Yangs and on the Bellarine Peninsula. There is no regularity about the sightings, so are considered as accidental.)

BIRDS OF YESTERDAY AND TODAY (Cont'd.)

Spotted-shouldered Dove (Diamond Dove): Geopelia cuneata. A lone bird was recorded as being shot at Bambra by Mr. Mulder. (Like the previous species, such records so far south are considered accidental.)

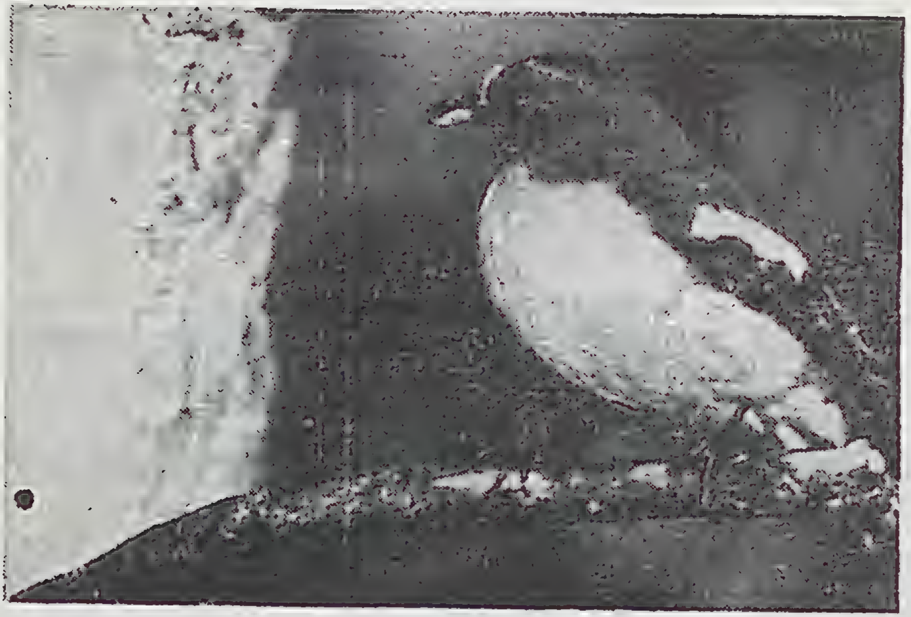
Sooty Oystercatcher: Haematopus unicolor. Listed as occurring on the rocky shores of Apollo Bay and Lorne. (Never common, odd birds are still to be found in these localities.)

Hooded Dotterel: Charadrius cucullatus. Sir Charles wrote: "I do not know a more charming little bird than this representative in Australia of the Ringed Plover of Europe". Mentioned as being found on the beaches at Lorne and Airey's Inlet. (Popularity by the public for these beaches has no doubt driven them further afield and today I only know of them occurring between Breamlea and Point Lonsdale in the Geelong Region.)

Nankeen Crane or Night Heron: Nycticorax caledonicus. Listed as rare and a pair for many years were to be seen in iron-barks on the side of Mount Berthon, Airey's Inlet. (Sightings could still occur along the upper region of the Barwon or Anglesea River. A thriving colony at Queens Park, Newtown, has built up the local population in recent years.)

Australian Gannet: Sula serrator. No mention is made of Gannets west of Torquay other than - "I believe there was formerly a nesting-place of Gannets on Laurence Rocks, off Portland. The nearest really flourishing present-day colony is on Cat Island in the Ferneaux Group. Here in November, 1901 I saw the birds lined up in hundreds". (Today the Cat Island rookery has almost been wiped out by poaching fishermen whilst Lawrence Rocks - now spelt this way - has a thriving rookery of some 600 breeding pairs. Gannets are regularly seen today right along the coast of the Otways.)

White Hawk (White Goshawk): Accipiter novae-hollandiae. Sir Charles wrote this - "It is one of our rarest hawks. They shoot it because it is beautiful, making to themselves the baseless excuse that it is a hawk, and that all hawks are hurtful - which they are not". (Fortunately today these magnificent hawks are still with us, and they still have a stronghold in this part of the State. During the winter they appear to move to the foothills,



FLAME ROBIN

Photo by Eric Bound.

WHITE GOSHAWK

Photo by Trevor Pescott.

BIRDS OF YESTERDAY AND TODAY (Cont'd.)

particularly on the northern slopes, and some do move away from the Otways to the plains north of these ranges.)

White-bellied Sea-eagle: Haliaeetus leucogaster. Sir Charles wrote - "In 25 years I have never met an example of it here - Eagle Rock, at Airey's Inlet - Eagle's Nest Rest one sees on some of the old charts - is so called from having once been the nesting-place of this Eagle". (For the Geelong region I know of only two records of this species, Lake Connewarre in 1958 and Cape Otway in May of this year.)

Powerful Owl: Ninox strenua. A Mr. Berthon shot a lone bird at Airey's Inlet in 1895 and at Bambra another was shot, being in the collection of Mr. Mulder. Sir Charles wrote - "These are the only instances of this bird's occurrence in the district of which I know; but there must be pairs scattered through the forest, as it is a stationary species". (Today, Powerful Owls are not uncommon and reported from Otway region.)

Masked Owl: Tyto novae hollandiae. Mr. Mulder's collection contained one bird shot near Bambra. (A very rare species in this State.)

Black Cockatoo (Yellow-tailed Black Cockatoo): Calypyorhynchus funereus. Sir Charles recorded - "in 1894, selectors at Bambra said that the birds then bred in the depths of the forest in holes in giant gums". (This species is still to be found in the Otways, and once the plan for planting pines on the northern Otways eventuates, large flocks could occur.)

Corella: Kakatoe tenuirostris. Sir Charles wrote this - "Mr. Mulder assures that he has seen large flocks of them at Bambra, and that they have a chuckling call, very distinct from that of the common White Cockatoo". (No large flocks exist there today, but stray birds could move in with cockatoos and flocks of Corellas do frequent Lake Bolac and Glenthompson, not so many miles to the north of the Otways.)

King Parrot: Aprosmictus scapularis. Sir Charles said this - "I think this is the most handsome parrot we have seen. At Christmas 1902, Mr. C.T. Seeley and myself walked from Forrest to Apollo Bay, via Mt. Sabine. On the long decline towards the sea, King Parrots were constantly crossing the road in front of us". (They are not

BIRDS OF YESTERDAY AND TODAY (Cont'd.)

that common today, but there is no concern at the present as to their survival in the Otways and appear to be holding their own.)

Blue-winged Parrot: Neophema chrysostoma. (I mention this species as it is one bird not recorded by Sir Charles. Over recent years I have observed them at Airey's Inlet, and only recently three were flushed from the banks of the George River, Lorne. However, Sir Charles does mention the Orange-bellied Parrot (now known as the Orange-breasted Parrot) N. chrysogaster as being recorded at Anglesea - a closely allied species.)

Ground Parrot: Pezoporus wallicus. At Airey's Inlet was the only sighting of this rare species by Sir Charles, one evening during the summer of 1892/93 on the creek across from Mr. Berthon's Wybalenna homestead. (In more recent years, Ground Parrots were recorded at Chapple Vale in the western region of the Otways and today appear to be extremely rare as far as the Otways is concerned.)

White-throated Nightjar: Eurostopodus mystacalis. (This is another species not mentioned in Sir Charles's book, and it appears to be a species only located as for the Otways in recent years. The first indication was a dead bird found between Bambra and Airey's Inlet in 1963, then five years later a breeding pair was located on an ironstone ridge north of Airey's Inlet, and last year another breeding pair with young closer to Airey's Inlet.)

Flame-breasted Robin (Flame Robin): Petroica phoenicea. Sir Charles wrote - "I should not like to say that no Flame Robins ever cross Bass Strait; it is, however, my belief that the majority at least which we see so commonly on the open country about Geelong from April to August, breed in the Cape Otway forest westward from Lorne in the months from October to January". (Today, naturalists still have this thought, and no proof has been forthcoming as to these birds crossing the Bass Strait from Tasmania or vice versa.)

Pink-breasted Robin (Pink Robin): Petroica rodinogaster. Sir Charles mentions the two Victorian species of pink-breasted robins, but he was only sure of the Pink Robin as occurring in the Otways, not the Rose Robin, the second species. (It has now

BIRDS OF YESTERDAY AND TODAY (Cont'd.)

been established that the Rose Robin occurs in the Otways, only to a lesser degree than the Pink Robin, which is still reasonably common there.)

Olivaceous Thickhead (Olive Whistler): Pachycephala olivacea. It was not until 1913 that Sir Charles observed his first Olive Whistler, and Mr. Mulder reported it as nesting regularly in the ranges near Bambra in 1894. (This species is much more elusive than the other whistlers, and could be much more common than we realise.)

Ground Bird or Spotted Ground-thrush (Spotted Quail-thrush): Cinclosoma punctatum. Recorded by Sir Charles as then becoming rare, and was to be seen by travellers travelling from Jan Juc, Anglesea and Airey's Inlet. (This species appears to be holding its own at Airey's Inlet, particularly on the Angahook Forest Park ironstone ridges.)

Geelong Ground-wren (Chestnut-tailed Ground-wren): Hylacola pyrrhopygia. Sir Charles wrote - "On December 29th, 1912, I met with another pair at Airey's Inlet; they were on a piece of scrubby, ferny ground on the hillside between Lugg's and the Lighthouse". It is interesting to note that a pair of this species was collected on the ridge overlooking Point Roadknight and the skins sent to England where Mr. Gregory Mathews declared them a new sub-species of the Red-rumped Hylacola, and named them with the vernacular, Geelong Ground-wren. (These birds are never easy to observe and are still to be found in selected habitat of heath and tea-tree.)

Emu Wren (Southern Emu-wren): Stipiturus malachurus. Recorded by Sir Charles at Anglesea, Airey's Inlet and Wensleydale and is apparent that the species was well established. (Today it appears to be a different story, as development has driven them from haunts where Sir Charles mentions them as being found, and regular sightings are becoming fewer and fewer.)

Rufous Bristle-bird: Dasyornis broadbentii. Sir Charles was well aquainted with this species, and found that from Lorne westwards, it occurred many miles in from the coast. (This bird has been driven from its extreme eastern habitats near Torquay, but is still holding its own elsewhere, and can be heard calling in some of the

BIRDS OF YESTERDAY AND TODAY (Cont'd.)

habited areas of Lorne, wherever a gully exists. It does still occur well inland from the sea as Sir Charles found.)

Tawny-crowned or Fulvous-fronted Honeyeater (Tawny-crowned Honeyeater): Gliciphila melanops. Sir Charles recorded - "This has always been a favourite bird of mine, from the time I first found it, in 1890". (Today, this is one bird which we are very concerned about, as it is rarely found in its old haunts of heathland where it would breed.)

Fire-tailed Finch (Beautiful Firetail): Zonaeginthus bellus. Sir Charles wrote - "In July 1893, I obtained at Airey's Inlet a single bird of this species, which was set up by Mr. Mulder and is now in the Geelong Museum. I never saw it in the district before or since". (The species no doubt still exists in isolated parts of the Otways, but observations are very few and far between. I have not seen it myself in the Otways since 1961.)

Satin Bower-bird: Ptilonorhynchus violaceus. Of this species, Sir Charles wrote - "It is hardly too much to say that this is the most interesting bird to be found in the Geelong district, that very few people know of its existence, and that it is rapidly approaching the point of complete extinction". Mr. Mulder in 1893 reported a 'bower' of this species being built above the ground, in a pine tree (Pinus insignus) across several horizontal limbs at a point close to the main stem. Sir Charles had never heard of this behaviour before, and also he knew of no nest ever being found in the Otways. (To my knowledge, all bowers found in recent times, have been natural ground structures, and I know of no nest as yet. I would say that in some of the more remote areas of the Otways, this species is far from extinction and is holding its own. Only recently I observed two fully plumed males in flight at the ERskine Falls.)

It is apprent that three species of birds, King Parrot, Rose Robin and Satin Bower-bird, which are so well known throughout parts of Gippsland, are in a state of isolation in the Otways and one wonders why Lyrebirds and Pilot Birds are not also found there - or perhaps they did occur there at one stage and have become extinct, long before the 'Belcher' era.

LANDSLIDE LAKE IN THE OTWAYS

By Trevor Pescott

On June 23, 1952, the "Geelong Advertiser" reported the formation of a lake in the Otways; the east branch of the Barwon River was blocked by a landslide which deposited in the valley many thousands of tons of rock and earth.

The lake was formed, it is thought, on the 21st June, during a period of extremely high rainfall which caused the river to flood, and the rushing water apparently undermined the entire hillside, causing an avalanche.

It was not until the following day during an inspection of the Kaanglang Track that the lake was discovered.

This is briefly the history of the formation of the lake, and although the geological data is far more detailed, the prime cause and more importantly the date when the lake came into being are accurate.

The following year, on 6th August 1953, a new report brough headlines to the "Geelong Advertiser"; this report read - "A message received from Melbourne this morning says that the vast natural lake formed by landslides in June last year burst its banks at 11 o'clock last night, sending millions of gallons of water surging down the Barwon River".

The next day, the report read - "Fears of a flood disaster as a result of the collapse of the lake in the Otways were allayed yesterday morning when the water expended its force at Forrest".

All of this is rather melodramatic, but it records the second aspect in the formation of the Landslide Lake - that of a sectional collapse of the wall of the lake.

Now, nearly 20 years since the lake was formed, there is little evidence of the landslide itself, but in 1952 and 1953, a visit to the site of the lake showed the enormous forces that the landslide produced.

My father and I walked into the lake shortly after it was formed, and found a vast bank of deeply fissued earth and rock blocking the valley; huge trees had been splintered, enormous boulders strewn over the ground, and crevaisses many feet deep, some gaping open, others filled with tangles of wattle trees and undergrowth.

LANDSLIDE LAKE IN THE OTWAYS (Cont'd.)

Now, the lake is a place of beauty, a deep and calm expanse of water from which project the dead tops of trees which once grew in the valley.

How deep the lake is, I do not know; I was told by some local G.W.S.T. workmen that it is now "about 80 feet deep, but it was twice that" before part of the wall was washed away.

This last remark undoubtedly refers to the collapse of part of the bank in August 1953, but it is hard to believe that the top 80 feet could be washed away leaving the lower 80 feet in place; perhaps a loose 20 or 30 feet could go, leaving the lower section, but as far as I know no real evidence exists to confirm or refute the comment.

In "Wild Life" September 1953 p.245, there was a report that the lake was dry, but this is far from true.

Over the last few years, Geelong naturalists have often visited the lake, and have found a wide variety of birds and mammals on and around the water.

Mr. G. Gayner reported in November 1968 nests built in the dead trees, and that these probably belonged to Black cormarants; other water birds include Black swans, Coot and Black duck, but the water is probably too deep and cold to be rich in waterbird life.

H.J. Frith in his book "Waterfowl in Australia" 1967, writes "High mountain lakes normally support a few Chestnut Teal and Mountain ducks, but are too deep and cold to be of great value to waterfowl, except in very dry seasons" (description of photograph opposite page 27).

Mammals include Platypus which are reasonably plentiful in the lake, Swamp Rat and probably Water Rat from the margins, and the other Otway mammals including Phascogale, Swamp Wallaby, Echidna and Possums.

Landslide Lake - there was a suggestion at one stage it should be called Lake Elizabeth, this was never formally adopted, nor, I believe, should it be! - is an excellent area, well worthy of a visit, and it is situated perfectly to be preserved as a permanent reserve.

SOME OTWAYS FUNGI

By Gordon McCarthy

The fungi of the Otways varies with the vegetation, which ranges from dry schlerophyl forest in the Anglesea, Airey's Inlet region to wet schlerophyl forest in the Lonre, Apollo Bay, Cape Otway areas.

Last autumn when the Club visited the open ironbark area of the newly formed Angahook Forest Park, a good variety of fungi was noted.

By far the most colourful was the "Cortinars". This name is taken from the Latin word "Cortina" meaning a veil. This veil protects the gills of the immature fungi, and when ruptured hangs like a skirt around the stem of the mature fruiting body.

The "Cortinars" come in an amazing variety of colours, four of which were recorded. The ochry-yellow , Cortinarius ochraceus, which had pieces of leaves and twigs stuck to its glutinous top; the beautiful violet Cortinarius sub-archeri, which is recognised by its purple stem; Cortinarius austro-venetus, the unusual satiny green agaric, and the dry satin deep red Cortinarius sanguineus from which a reddish juice can be squeezed.

Another unusual agaric was Collybia radicata, or Rooting shank, which is white, tall and slender, and when pulled up has a long tail-like root. Omphalia chromacea is a small yellow funnel-shaped fungi with widely spaced gills; this brightened up many a bare patch of earth.

Others included members of the tiny Mycena family, colourful orange Coral fungi (Clavariaceae), numerous orange and red Brackets and several puff-balls and earth stars (Gasteromycetae).

In the wetter areas of the Otways, and this includes the Parker River valley, a beautiful pale violet coral fungi is to be found growing on mossy logs. Another unnamed variety also growing on a mossy log was a large mauve flower-like fungi, the under surface of which was covered with pores. Yet another one growing on rotted wood was like a piece of fur from a Polar bear.

A fascinating little puff-ball was found growing on 2" high stems brown and rough looking like tree fern stems. The small purplish top had a cap similar to the bud cap or operculum of a eucalypt, which was blown off by the emission of the spores. Underneath this

SOME OTWAYS FUNGI (Cont'd.)

cap was a small raised red cross in the centre of which was the spore orifice. Other rotting logs were covered with brackets of the parasitic Rainbow fungus.

In the Maits Rest reserve grows the interesting Cordyceps taylori, largest of the vegetable caterpillars. This fungi parasitises the larva of the Ghost Moth, then sends up an antler-like fruiting body from the mummified grub. This fruiting body contains the spores which will adhere to, or be swallowed by, some other hapless caterpillar.

This is only a very small percentage of the great variety of fungi awaiting the searcher in the Otways.

* * * *

TIGER CAT IN THE BATHROOM.

By Trevor Pescott

On the 1st January, 19 , I received a telephone call from the Postmistress at Tanybryn, near Apollo Bay, Mrs. Sell; would I believe that there was a Tiger Cat in the bathroom, and was I interested in seeing it?

I hastened down to the Post Office, which is on a farm property run by her husband, and at the eastern end of Turton's Track, and sure enough, there beneath the bath was a rather surly Tiger Cat.

The animal had evidently entered through the back door, walked past the sleeping watch (!) dog in the back verandah, then into the bathroom; there it stayed, until Mr. Sell found it later in the morning.

A rather strange New Year's Day visitor!

* * * *

JUNIOR PAGES

Above is shown the male Satin Bowerbird, a photograph taken by Mr. F. James during a trip to Queensland; it shows very clearly the shape of the bird, and if we could use colour we would see that the Bowerbird is a very beautiful shade of deep blue.

In dull light, the Bowerbird appears black, but the blue gloss on the feathers shows up well as soon as the bird moves into a forest clearing or perches on a branch which is in the open.

The female Satin Bowerbird is greyish-green on the wings and back, and underneath she is yellowish-green marked with dark brown; both male and female are about 12-1/2 inches in total length - that is , slightly larger than a Mudlark which is 10-1/2 inches long.

The nest is a rather loosely built, saucer-shape, and made of sticks lined with leaves; two or three eggs are laid, these being dark cream blotched with various shades of brown and grey.

Male Bowerbirds, until they are several years old, are colored like the female.

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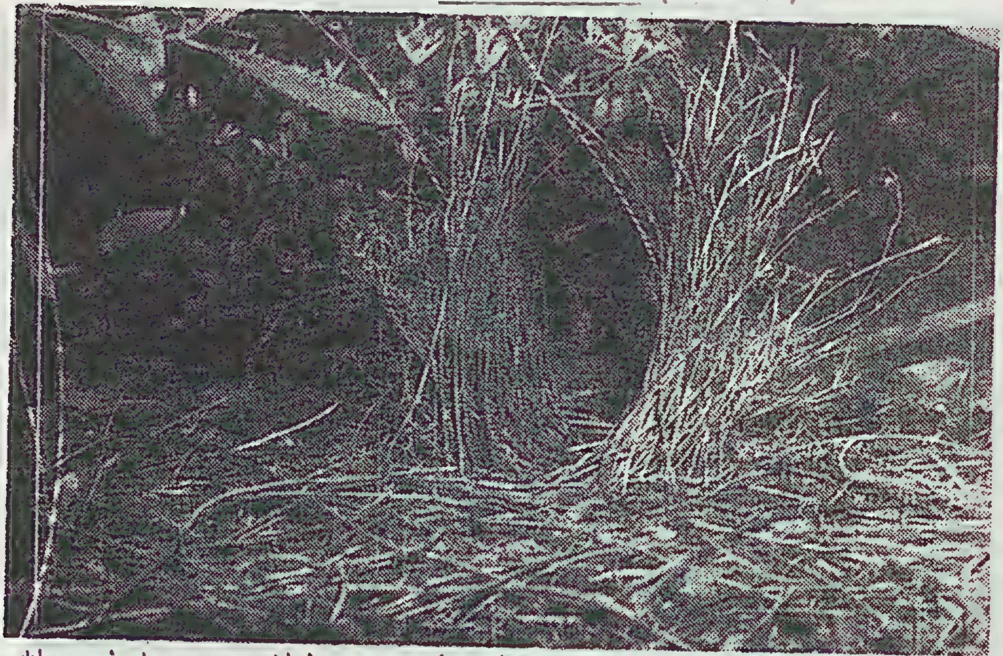
JUNIOR PAGES (Cont'd.)



In the picture on this page is the bower or playground of the Satin Bowerbird, photographed by Mr. T. Pescott in the Otway Ranges where the bird is fairly common.

This is not the nest, but just like the Lyrebird's dancing mound, the bower is a place where the male bird displays to the female; in the bower which is built on the ground, are a number of blue feathers, some bones perhaps, mostly objects which are blue or at least bluish in color.

These are collected by the Bowerbird and they used almost as "toys" by the bird when he is displaying to his mate or threatening a rival male; some rather strange things are collected by the bird, these including bottle tops, knitting needles, blue ball point pens, pegs, anything at all that a careless camper may leave should he camp in Bowerbird country.

The call of the Bower bird include a strange wheezing note, and various other harsh notes; it is quite an accomplished mimic, even though it does not use mimicry very extensively.

* * * *

OFFICE-BEARERS 1970-71

President:
Mr J. Wheeler, 19 Roslyn Road, Belmont. 3216.
(Phone: 43.3441)

Vice-Presidents:
Mr. J. Hunt, "Stone Chimney", Paraparap.
(Phone: 66.1281)
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Mr. G. McCarthy, 26 Fairbrae Avenue, Belmont. 3216.
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Hon. Editor:
Mr. T.W. Pescott, 4 Victoria Terrace, Belmont. 3216.
(Phone: 43.4368)

Hon. Librarians:
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(Phone: 21.1385)

Excursions Secretary:
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(Phone: 43.3441)

Committee:
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(Phone: 7.9206)
Mrs. B. Quirk, 36 Fairview Avenue, Newtown. 3220.
(Phone: 21.1229)
Mr. G. Carr, 19 Highview Parade, Hamlyn Heights. 3218.
(Phone: 7.2218)

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THE GEELONG FIELD NATURALISTS CLUB

Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in the month, at 8 p.m. in the McPhillimy Hall, St. George's Church, Latrobe Terrace, Geelong

Visitors Welcome

All papers submitted for publication in this journal should be sent to the Hon. Editor

Ken Jenkin Print Geelong

Vol. 7 No. 4 FEBRUARY, 1971 Price 25c

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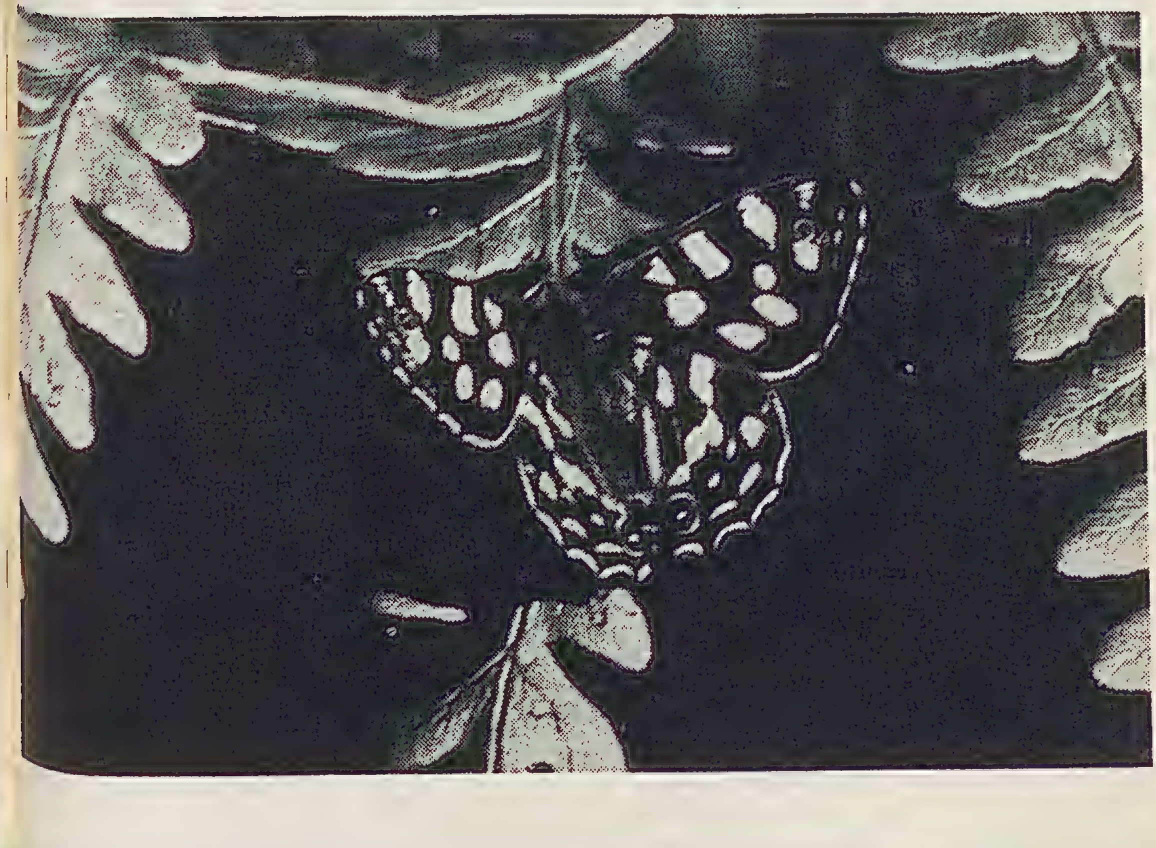

Registered at G.P.O. Melbourne for transmission by post as a periodical

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The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

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Subscription Rates are:
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Adult Membership	$2.00
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COVER PHOTOGRAPH:

Xenica butterfly at Redwater Creek, Otways.

By Trevor Pescott

GEELONG NATURALIST

Vol.7. No.4. February 1971

EDITORIAL

As a supplement to this issue of "Geelong Naturalist" is a detailed report on the activities of our Club since it was first formed in April 1961 - just 10 years ago.

Seven years ago, this magazine was first printed, and since then a wide range of articles and photographs have been printed, presenting to club members a great deal of useful and readable material.

However, there is never sufficient material on hand to ensure the publication of any one issue beyond that one actually being processed; and this invariably makes editing most difficult, and the result all too frequently is that each copy is late.

So this is an appropriate time to again make this plea - material and photographs are needed urgently so that our May issue can be printed in that month, and not at some later date.

Preferably, all material should be typed - but this not always practicable, so clearly written articles are quite acceptable; photographs should be printed to the exact size of reproduction - generally to fit comfortably as a half-page illustration.

Photographs should be on glossy paper, and of good detail and contrast; line drawings and maps should be of black ink on drawing paper, and also of a size that can be used without alteration.

And may I take this opportunity to thank all who have assisted the Editor by submitting material for publication.

TREVOR PESCOTT

Hon. Editor.

NATIVE MAMMALS OF THE OTWAY RANGES

Compiled by J. Hampton

Over the past two years the Mammal Survey Group of the F.N.C.V. has been carrying out preliminary sample surveys of the native mammals of this region. Six sample areas, representative of some of the different habitats present have so far been surveyed and these have encompassed the area from Jancourt Forest to Cape Otway to Airey's Inlet. The detailed results of these surveys will be published in due course but, in summary, the following eighteen species have been recorded during the camps:-

	MONOTREMES
Echidna	Tachyglossus aculeatus (Shaw)
Platypus	Ornithorhynchus anatinus (Shaw)
	MARSUPIALS
Brown Antechinus	Antechinus stuartii (Macleay)
Swainson's Antechinus	Antechinus swainsonii (Waterhouse)
Swamp Antechinus	Antechinus minimus (Geoffrey)
White-Footed Dunnart	Sminthopsis leucopus (Gray)
Short-Nosed Bandicoot	Isoodon obesulus (Shaw)
Brush-Tailed Possum	Trichosurus vulpecula (Kerr)
Yellow Bellied Glider	Petaurus australis (Shaw)
Ringtail Possum	Pseudocheirus peregrinus (Boddaert)
Grey Kangaroo	Macropus giganteus (Shaw)
Swamp Wallaby	Wallabia bicolor (Desmarest)
Red-Necked Wallaby	Macropus rufogriseus (Desmarest)
Potoroo	Potorous tridactylus (Kerr)
	RODENTS
Southern Bush-rat	Rattus fuscipes (Waterhouse)
Eastern Swamp-rat	Rattus lutreolus (Gray)
Broad-toothed Rat	Mastacomys fuscus (Thomas)
	BATS
Gould's Wattled Bat	Chalinolobus gouldii (Gray)

EDITOR'S NOTE: There are other mammal species known from the Otways, but these have not yet been recorded during M.S.G. Campouts.

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION

* PART 2 - FOREST AREAS

By Geoff Carr

The wet sclerophyll forest of the Parker is fringed by heathlands on their seaward side and forest also penetrates other associations in gullies where streams flow through several vegetation types. The forested valley of the Parker River is bordered by heathland in its lower section.

Vegetation here is mainly dominated by the tree species found in the wet sclerophyll forest (except Mountain Ash), and a diverse understory of species common to the wet sclerophyll forest and heathland but with many confined to the forest type. Smaller shrubs and herbs are numerous, and an account of them can be found in the plant list.

WET SCLEROPHYLL FOREST

The climax vegetation of the higher parts which occupies a large proportion of the area being dealt with is the wet sclerophyll forest. These temperate rain forests are the most impressive and interesting of the vegetation types, and are typically associated in the mind with the Otway Ranges, where massive Eucalypts emerge from a dense understory beneath which fern gullies with a prolifery of lower vegetable life flourishes.

Topographically, the country is rather dissected with deep gullies and steep slopes, sharp ridges and spurs. The valley of the Parker River in its middle course descends 1,000 feet from Cape Horn on the Ocean Road to the coast east of Cape Otway, whilst the spur

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* Part 1 was printed in Geelong Naturalist Vol.7, No.3, November 1970; a checklist will be printed later.

Hon. Editor.

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

around the Parker (Ridge) Road rise 900 feet above sea level.

These ridges intercept the moist dominant south-westerly air stream and receive the burden of c. 70 inches of rain per year, which combined with the fertile soils derived from the lower Cretaceous to Jurassic sandstone are capable of supporting a luxuriant vegetation. This is the overwhelming impression to the visitor in the Otways.

The forests are dominated by several species of Eucalypts forming pure or mixed stands. Eucalyptus globulus (Blue Gum), E. cypellocarpa (Mountain Grey-gum), E. obliqua (Messmate), E. regnans (Mountain Ash), E. obliqua x E. regnans ("Otway Messmate"), and E. viminalis (Manna Gum) are the species represented. Mountain Ash, Grey-gum and Messmate are the common species of pure stands Messmate perhaps most of all. The interesting hybrid Eucalypt between Messmate and Mountain Ash is conspicuous along the Parker Road freely mixed with its parent species. It bears a local name of Otway Messmate.

The trees reach massive proportions, often greater than 200 feet, and form a mid-dense to dense canopy related to the effects of fire and timber getting. The old original stands of trees show much damage from the great 1939 fires which burnt out their crowns so that many show dead wood on the uppermost parts. Epicormic shoots seem largely responsible for the present branches on these trees. Increased wind velocity as a result of defoliation in the fires probably hindered growth. Where young regrowth Eucalypts occur, and this is in many areas, they are dense and vigorous- for example along the Parker Road. Fire is the natural agent of regeneration, but disturbance of the vegetation and soil by timber getting produces a crop of seedlings, some of which will attain maturity.

A huge but less common tree is confined to fern gullies such as at Maits Rest, but it can be said to be co-dominant where found. The species is Nothofagus cunninghamii (Myrtle Beech), and magnificent examples of this tree reach 100 feet or more in height, growing mostly with their feet in, or near, the stream at the bottom of the gullies. Unlike the Eucalypts, they are not shaft-like, but extensively and massively branched supporting a spreading crown of fine dark green foliage in contrast to that of the

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

gums. These venerable and ancient giants are the most impressive of the Otway forests.

Beneath the canopy of Eucalypts and Myrtle Beech trees in the gullies, Acacia melanoxylon (Blackwood) forms a lesser and often discontinuous canopy, but specimens reach maximum development in fern gullies where heights of 80 to 100 feet may be obtained. These trees also contrast strongly with the Eucalypts, having dense dark green foliage forming a prominent part of the vegetation.

The chief understory beneath the gums however is the very dense canopy of small trees which grows to about 30-50ft. high at a maximum. A number of tree species are found in this canopy, and it may be variously staged. Pomaderris aspera (Hazel Pomaderris) is often the dominant, especially of sites which have been disturbed. Olearia argophylla (Musk Daisy-bush), Bedfordia salicina (Blanket-leaf), Hedycarya angustifolia (Austral Mulberry), Phebalium squameum (Satinwood), Pittosporum bicolor (Banyalla), Correa lawrenciana (Mountain Correa), Notelaea ligustrina (Privet Mock-olive), Coprosma quadrifida (Prickly Currant-bush), and Helichrysum dendroideum (Tree Everlasting) are the other species of the canopy. Individual species vary slightly in distribution, or have preference for certain conditions, some such as Correa and Helichrysum not being present in deep gullies where Olearia, Bedfordia and Coprosma are more at home.

These trees form a very dense canopy so that very little light reaches the forest floor. Only very shade tolerant plants are able to flourish, and chief among these are the ferns.

Regeneration in this climax wet sclerophyll forest community takes place when vegetation is disturbed, by natural or man induced means, at a rapid rate. Limbs or dead rotten trees (which are frequent) crashing to earth admit light through a broken canopy, and dense growths of herbs soon appear, or tree seedlings lingering in dim conditions leap away with increased illumination. Regeneration is likewise rapid on disturbed ground of roadsides and clearings, with again the lower canopy species soon dominating and forming very dense growths, particularly Pomaderris. Forest trees such as Pittosporum, Nothofagus and Coprosma may begin life as seedlings perched on the trunk of a Soft Tree-fern, through which they grow to the soil, increasing in size until the fern may die. Orange

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

seeds of Pittosporum are frequently seen on tree-fern trunks at Maits Rest in autumn, being deposited there by birds.

In the pristine gloom beneath the lower canopy, a green-brown world of ferns, mosses, liverworts and lichens, flourishes with little representation from the higher monocolyledons or dicotyledons. The forest floor is largely bare of plants except for ferns, but it is covered thickly with litter and a carpet of humus. Numerous epiphytes gain a footing on trunks of tree-ferns, trees (especially Myrtle Beech), rotten logs, rocks and bark.

Dicksonia antarctica (Soft Tree-fern) dominates the gullies and itself forms a canopy further reducing light. They reach about 15-18 feet in height, often in close proximity, and if falling over, continuing to grow, the trunk then turning upwards. Cyathea australis (Rough Tree-fern) is less abundant and grows higher up the slopes and ridge-tops. It can reach a height of 25 feet or more. Cyathea cunninghamii (Slender Tree-fern) is a comparatively rare species and grows tallest of all. Specimens at Maits Rest are 50 feet high with extraordinary attenuated trunks. They grow in the wettest of sites. Along the Parker River the very rare Cyathea marcescens (Skirted Tree-fern) grows, but a long search only revealed two specimens, the largest 10 feet high. This fern is the only one endemic to Victoria and is known only from four localities. Very distinctive in appearance, it earns its common name from the persistant fronds which when dead clothe the trunk from top to bottom, hence 'skirted'.

The main ground ferns are Blechnum procerum (Hard Water-fern), Asplenium bulbiferum (Mother Spleenwort), and Polystichum proliferum (Mother Shield-fern), all of which may grow in extensive masses. Trunks of soft tree fern provide ideal support for a wealth of epiphytes with Rumohra adiantiformis (Leathery Shield-fern), Asplenium bulbiferum (Mother Spleenwort) and Microsorium diversifolium (Kangaroo Fern) largest and most conspicuous of these. Filmy ferns, liverworts, and mosses are abundant.

Trunks and limbs of trees are also extensively clothed, particularly Myrtle Beech on which several plants attain maximum development, such as the filmy fern Mecodium rarum, and Asplenium flaccidum (Weeping Spleenwort), one of the most delicately beautiful of ferns. Microsorium is one of the most abundant, and

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

the tough rhizomes completely cover limbs and trunks, often to a great height. Fine colonies also occur high up in crotches of gum trees.

Other epiphytes which occur on trunks of tree ferns or butts of trees include the fern relation Lycopodium varium (Long Club-moss) which is rare, but excellent examples grow at Maits Rest on Soft Tree-fern and Tmesipteris billarderi (Long Fork-fern) a rare primitive, epiphytic on tree-ferns also. Several orchids assume an aerial habit but are usual terrestrial elsewhere and include Corybas dilatatus (Stately Helmet-orchid), Pterostylis pedunculata (Maroonhood), Chiloglottis cornuta (Green Bird-orchid), and Pterostylis obtusa (Blunt-tongue Greenhood). Gastrodia sesamoides (Potato Orchid) is very abundant in some gullies, as at Maits Rest, and this leafless saprophyte can be found in the shadiest of situations. But, gem of the whole forest must be Sarcochilus australis (Butterfly Orchid) which appears rare but is locally plentiful, growing on several host supports, namely Coprosma quadrifida (Prickly Currant-bush), Pomaderris aspera (Hazel Pomaderris) and Olearia argophylla (Musk Daisy-bush). It is situated from three to ten feet above ground level, and the finest specimens grow on Hazel. Flowering period is November to January.

Few monocots, except Uncinia tenella (Delicate Hook-sedge) (usually epiphytic), penetrate the deep gullies, but Carex appressa (Tall Sedge) is not infrequent and Lepidosperma sp. (Sword Sedge) may be dominant on slopes. The scrambling Tetrarrhena juncea (Forest Wire-grass) is also very abundant forming dense entanglements as it ascends shrubs and trees to about 10 feet. It is the bane of Otway foot sloggers, and greatly hinders progression through the undergrowth, especially by roadsides and clearings.

A discussion of vegetation of the Otways would be incomplete without mention of the fungal flora which attains heights of development in these Ranges. Fungi here are no doubt very significant ecologically. Scores of species are found, agrics and polypores the most conspicuous, but hosts of species, often minute, are hidden from view under litter and in dark recesses. Three species stand out amongst the ranks as being most interesting; the first and rarest being Hericium erinaceum a parasite of Blackwood which has been likened to a frozen waterfall. It is a fairly

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

large and spectacular species and was discovered by a group of naturalists in November 1968 and constituted a new record for Australia. Only one plant has ever been found. Another species is Cyttaria gunnii, the Beech Orange (from its shape and color), a parasite on the branches of these trees. It is very attractive. Cordyceps taylori (Vegetable Caterpillar) is an extraordinary member of its genus, being large and branched. Parasitic on caterpillars of the Ghost Moth, it is abundant in the fern gullies of Maits Rest.

Vegetation of roadsides, tracks and clearings is often very dense, and in these situations of greater light, or where light penetrates to the ground many additional species appear, although competition is great. Herbaceous species are well represented, particularly on roadside verges, and exotic weeds form a large proportion of these. Trifolium repens (White Clover), Cirsium vulgare (Common Thistle), and the grasses Holchus lanatus (Yorkshire Fog), Dactylis glomeratus (Cock's-foot Grass), and others are frequent. Native grasses and herbs are plentiful such as Ranunculus lappaceus (Common Buttercup) and Prunella vulgaris (Self Heal) among the showier species.

Pomaderris (Hazel) is most abundant among the regenerates of clearings and such, invariably growing with Forest Wire-grass which is rampant. Shrubs such as the beautiful Olearia lirata (Snowy Daisy-bush), Coprosma hirtella (Rough Currant-bush), and the delicate climber Billardiera longiflora (Purple Apple-berry) make an appearance mostly by the roadsides where competition (for light) is least.

WHAT VALUE THE OTWAY RANGES?

Those familiar with the Cape Otway to Blanket Bay, Parker River area will immediately recognise the value of its recreational potential. Such a variety of scenery from rugged coastal to lush summer-cool rain forests to delight the city-tired eye. This is a considerable value, and applies to the whole Otway Ranges. The coast has long been popular as an unexcelled recreation zone, but more and more people are penetrating inland to wander in the bush in roles of picnicers, fishermen, photographers, or just curious idlers. How much will this demand magnify over the next

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

decade? It is your guess.

But does all this jumble of vegetation mean anything to a naturalist or his educated soul-mate the scientist-ecologist, botanist, mammologist, or what? We think the Otways very important in spite of our (the naturalists) often biased viewpoint, in ways that cannot be measured in cents and multiples of cents. There is an undeniable sentimental attachment to a place visited year after year which has continued to yield a wealth of knowledge to a personal fund.

Botanically the Otways, more particularly the area under discussion, is significant and in some respects unique as an isolated western extremity of a vegetation type much more extensive in eastern Victoria and Tasmania. And in the broader sense ecologically because of faunal-botanical considerations, not quite my province. I think here in terms of the wet sclerophyll forest.

Wet sclerophyll forest must have dominated a large area when Tasmania was joined to the mainland by the land bridge now long since subsided. The original forests are now fragmented, existing in elevated parts of eastern Victoria, Tasmania, and the Otway Ranges, itself not of insigificant size.The Otways are now an isolated reservoir of wet sclerophyll elements and the forest bears a close affinity with that of Tasmania. As a western extremity in Australia of this type of vegetation, the area naturally means the geographical extremity in the range of no less than 30 higher plants, excluding a much more vast (but no less important) host of mosses, liverworts, lichen and fungi. The area also contains the only known Australian occurrence of the frozen waterfall fungus, Hericium erinacium and the only Victorian occurrence of Correa lawrenciana (along the coast). Apart from this, some rare plants are known from the locality and some unusual associations of plants.

Scientifically the Otways offers an exciting field of study for ecologist, botanist, mammologist, mycologist and others. A post graduate ecological study has already been conducted on regeneration of Myrtle Beech at Maits Rest by a University of Melbourne botanist. With the greater interest (thanks be!) in the environment, scientific interest is bound to be directed to virgin areas such as these fruitful field laboratories.

VEGETATION OF THE PARKER RIVER, CAPE OTWAY REGION (Cont'd.)

Following is a list of some of the more noteable plants.

Hericium erinacium ("Frozen Waterfall Fungus") - the only known Australian record.
Cyathea cunninghamii (Slender Tree-fern) - the most westerly occurrence of a comparatively rare species.
C. marcescens (Skirted Tree-fern) - the only known endemic fern to Victoria and one of the largest species, known only from four isolated localities.
Sarcochilus australis (Butterfly Orchid) - a rare and beautiful species with its most westerly occurrence in the Otways.
Nothofagus cunninghamii (Myrtle Beech) - most westerly occurrence.
Pittosporium bicolor (Banyalla) - most westerly occurrence.
Correa backhousiana - only known occurrence outside Tasmania.
Phebalium squameum (Satinwood) - confined in Victoria to the Otway Ranges.
Eucalyptus regnans (Mountain Ash) - most westerly occurrence.
E. kitsoniana (Bog Gum)
Acacia myrtifolia (Myrtle Wattle) - the distinctive robust form at Cape Otway is unique to this area.

Most of the other species with a western extent in range occurring in the Otways are ferns (see J.H. Willis, "Handbook to Plants in Victoria", Vol.I).

May the Otways, and particularly the part under discussion in this article, ever remain in a natural state as a testimony to this generation's good conservation judgment.

* * * * *

NEW YEAR TIGER CAT

The note about the Tiger Cat which arrived in a Tanybryn home on New Year's Day in the last issue of "Geelong Naturalist" (Vol.7 No.3, page 94) lacked one vital detail!

The year concerned was 1969.

The Editor apologises for this error.

* * * * *

FEATHERED NAVIGATORS

By Arthur E. Woodley

for Shiplover's Society of Victoria.

The Mutton Bird, as the Short-tailed Shearwater is usually known, is migratory, leaving its nesting areas in the Bass Strait region in late March or early April, flying first north easterly to places north of New Zealand, from there north west to the Phillippines, and following the coast of Asia past Japan to the Aleutian Islands in the Bering Sea.

Towards the end of the northern summer they begin their flight down the west coast of America; then they cross the Pacific near the Hawaiian Islands, and return to Bass Strait on the same day each year. It is known that some of these birds have repeated this flight thirty times.

This migratory pattern is unique. Times of arrival and departure are strictly adhered to and, in fact, in many cases are maintained to the very hour.

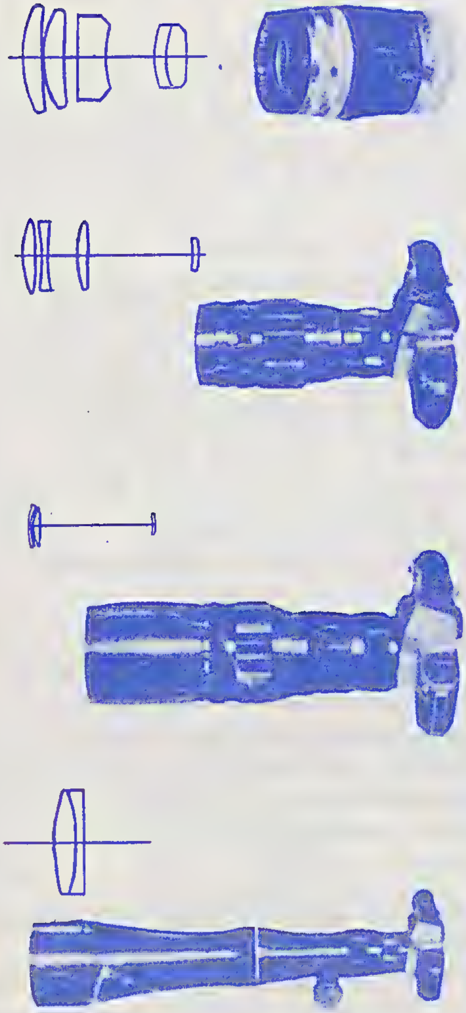
The parent birds begin their flight north about two weeks before their young, which seem to follow the same "flight path" by relying on instinct.

The Bass Strait region is the only nesting area for mutton birds. Burrows, in which they make the nests, are found in sandy soil near the edge of the sea. In very crowded rookeries these may be as many as nine to the square yard.

The shearwater female takes five years to mature; the male takes seven. One egg only is laid each season, and if anything unfortunate happens to that one there is no second egg that year. Some cases are known of birds more than thirty years old still breeding. The birds return to the same burrow every year, and after mating the egg is laid and the female sits on it for two weeks without stirring for food. The egg is the size of a duck egg, and, like the flesh of the bird, has a strong oily taste. During this period the male is at sea feeding, but at the end of the second week he returns to relievehis mate on the nest. Mutton birds are usually monogamous, but if one mate is killed another is selected.

Unlike many sea birds, whose excreta is deposited in the form of

PHOTOGRAPHERS!



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FEATHERED NAVIGATORS (Cont'd.)

guano, the sea-going habits of the mutton birds keep their nesting area comparatively clean. Their food consists mostly of the small octopi and squid which abound in the waters of Bass Strait.

The build of the bird does not lend itself to easy travel on land; its short legs make for a clumsy rolling wing movement, and a fluttering gait. Without a "runway" at a reasonable height it is difficult for the birds to become airborne. If conditions at sea are too calm it is impossible for them to leave the water; they just "sit it out" and wait for a blow.

All flight movements round the rookeries are carried out at night; the great exodus occurring just before dawn, the return at dusk. The pre-dawn departures develop into a wild scramble as hundreds of birds jostle for position on the runway - and one runway can serve an area of 100 square yards of rookery - and there are many collisions and many abortive take-offs, with dozens of birds fighting for a second try, before all the birds have gone.

Mutton birds dig their burrows in sandy soil, usually in the face of a small ledge or beside a tussock of grass. Like rabbit burrows, these are slightly inclined to the earth's surface and go to a depth of 6 or 7 feet.

The mutton bird has been blamed for soil erosion of the foreshores, for the sandy soil must also support vegetation if the burrows are not to collapse over the nests, but in their natural state the danger of this seems to have been exaggerated. It is only when man imposes some other regime, and grazes, cultivates or burns the area, that the vegetation is destroyed and the mutton birds, returning to the same location, dig more burrows. Then trouble can start.

It was quite recently that the new theories were evolved concerning the reasons for the navigational habits of these birds. The "Western Port News", as a matter of interest, published a small paragraph, mentioning that mutton birds had been seen flying round and round the brilliant flame at the top of the 180 ft. flare stack of the B.P. Refinery at Crib Point until the first sign of dawn.

The Fisheries and Wildlife Department investigated the report, and subsequently came up with an interesting theory. Mr. Keith Dempster, a senior research officer of the department, wrote:

FEATHERED NAVIGATORS (Cont'd.)

"It is generally believed now by scientists that migratory birds are guided in their choice of travels by reference to the positions of the sun and the stars, and experiments have been carried out which strongly support this view.

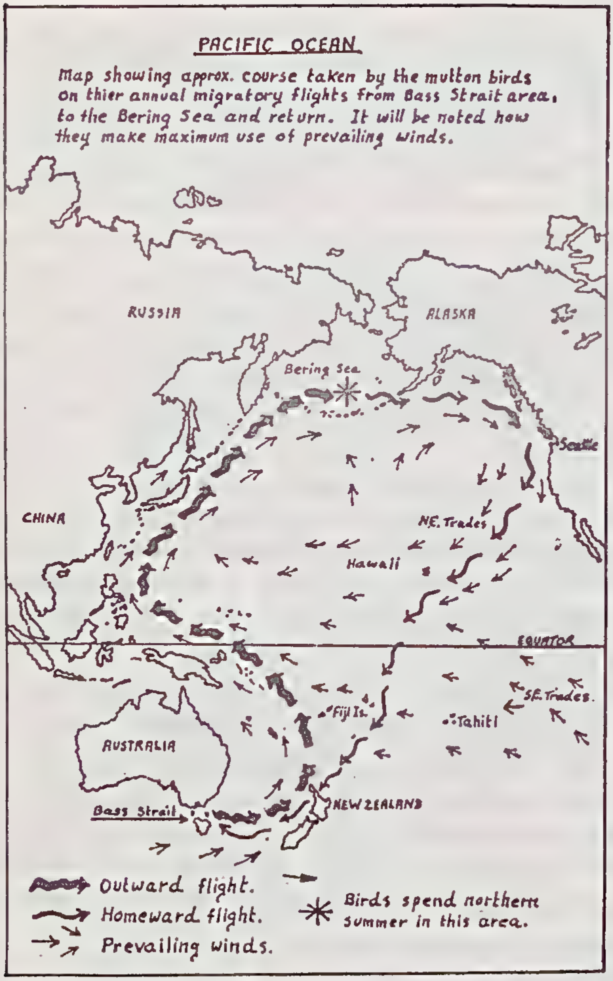
"In the case of the birds which fly by day it has been demonstrated that they are able to make allowances for changes in the relative position of the sun at different times of the day. Normally, however, over short periods of time the sun is so far distant that, in order to maintain a direct route, a bird would hold course so as to keep a constant angle between the light source and the line of flight.

"When an unusually bright light - such as the refinery flare - is introduced into the birds' flight path, the bird will try to fly a course which maintains the angular relationship to the new reference point which would have been necessary in the course of normal migration. But, in this case, a new reference point is so close that the only way in which a constant angle can be maintained between the flight path and the light is for the bird to constantly change its course - that is, to fly in a curved path. Unless the reference angle happens to be 90 degrees the curvature of the flight will actually result in a spiral path. Such a course eventually leads the birds to fly right into the light source, and this, in fact, does happen in the case of moths.

"Birds are a more highly developed group of the animal kingdom than insects, and they are able to avoid this danger, possibly because of something like conscious fear or perhaps because of a contrary involuntary action which causes them to avoid excessive heat . . . the birds may be condemned to fly round the flame until daybreak, when a stronger source of light appears and provides a new point of reference to free them from their endless journey.

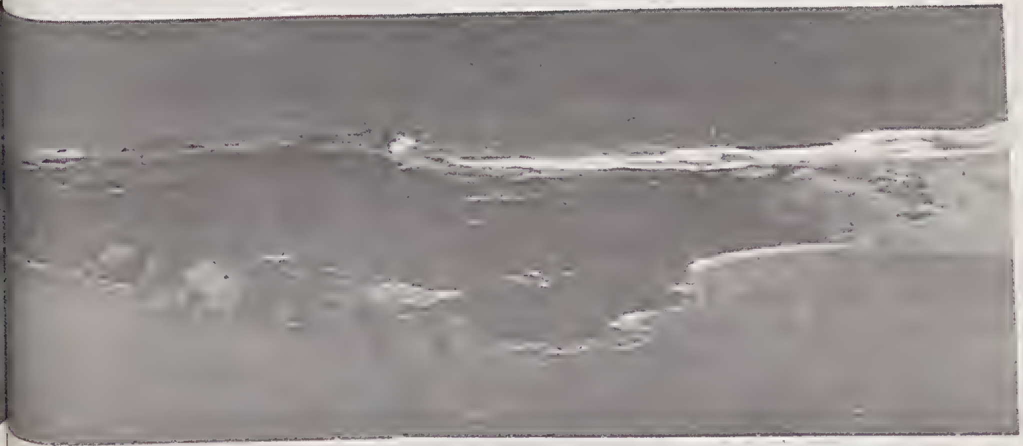
". . . Mutton birds normally arrive at Phillip Island . . . during the last week of October. Until this time a flare had not been in existence and this flight of mutton birds, being the first arrivals, apparently arrived after sunset and were, for the first time, confronted with this distracting light source from their flight path."

In the days of Victorian settlement before 1907, when the whole of the wildlife on Phillip Island was put under Government protection,



PACIFIC OCEAN

Map showing approx. course taken by the mutton birds on thier annual migratory flights from Bass Strait area, to the Bering Sea and return. It will be noted how they make maximum use of prevailing winds.



Cape Woolamai, eastern extremity of Phillip Island, Vic. "mutton birders" camps were set up on the beach in the cove at right of picture. - Photo by Cap't Pratt about 1940.

Showing the short even tail of the mutton bird or short tailed shearwater.

FEATHERED NAVIGATORS (Cont'd.)

"Mutton-birding", like Sealing, was a lucrative pastime. The late Mr. Woolley, who lived on the Island told me many stories of that time.

It was a hazardous business. A mutton bird has a beak as sharp as a kookaburra's, and does not hesitate to use it when its burrow is attacked. Venomous snakes too, frequented the burrows and there is an element of risk in exploring a burrow with hand outstretched.

The methods used to capture the birds or extricate them from their burrows were varied, but in many cases the hunter placed his hand, palm up, in the burrow. The bird would come and defensively peck at the tough-skinned palm, and with a swift movement the hunter would grab the bird's head. This needed both nerve and practice. Although the burrows were longer than a man's arm could reach this did not matter, as on hearing disturbance at its "front door" a bird would always come within reach to attack the intruder.

There was once a good market for mutton bird eggs, and for this the hunter had a long piece of wire looped at one end so that the egg could be scooped or rolled out of the nest.

The oil of the mutton bird, rendered down, is of high medicinal value. Mutton birds themselves, either smoked or fresh, used to be sold in Melbourne fish shops.

Although the mutton birds are protected under Victorian law, there is no evidence of any great increase in the bird population around the coastline. On some of the islands in Bass Strait which are not under the jurisdiction of Victoria a limited amount of hunting goes on, but this is rigidly controlled and even under these conditions there seems to be very little variation in the population. It was a far-sighted moved indeed to put the birds under protection. Future generations will be able to learn even more, and perhaps profit by the knowledge of these compulsive travellers, the feathered navigators of the Pacific.

Footnote:

First published in The Annual "Dog Watch" No.26. 1969.
Reproduced with the kind permission of the Shiplover's Society of Victoria.
The author of this article spent his boyhood on Phillip Island. He made the observation of the birds flying round the Refinery flare when he was employed at the Refinery as an operator. It was published in the Western Port News of 1st. November 1967, and subsequently the solution by the Fisheries and Wildlife Department on 3rd January 1968.

IS THERE AN OTWAYS TIGER?

By Trevor Pescott

I must confess to a change in belief in relation to the reported sightings of a large, striped tiger-cat in the Otways, for although I refuse to adopt the name of "Tasmanian Tiger" as most reports do, I am inclined to accept now that a Thylacine-type animal may inhabit the Otways.

But one must be cautious despite the variety of reports available (or perhaps because of them!) for there is no positive evidence of the existance of such an animal on the Australian mainland, much less in the Otways.

Ellis Troughton, in his book "Furred Animals of Australia", (sixth edition 1957, pp.48-50), wrote in a section titled "Striped Marsupial-cat of North Queensland" that for over 80 years there have been reports in that area of "a striped cat, loosely described as a cat just growing into a tiger".

He added, "there seems some possibility that a large striped marsupial-cat haunts the tangled forests of North Queensland", although "the failure of observers to obtain any parts of the hide, hair, skull or teeth, casts much doubt over the reports".

Such remarks apply absolutely to the Otways animal.

The latest I have is in a newspaper report in early November (just as I was settling down to write these notes, a copy of the report arrived in my mail); it states that "The caretaker of the Cape Otway lighthouse, Mr. Les Upton, believes he saw a Tasmanian Tiger on the road to the lighthouse on Sunday morning" (presumably Nov. 8th).

He was returning to the lighthouse about 10.30a.m. when he saw an animal "flash across the road into thick scrub"; he described it as about two feet long, with a tail about two-thirds the length of its body, a "squarish-looking" head, very short legs, reddish-brown with dark stripes along the spine near the tail".

Unfortunately, Mr. Upton "had seen photographs of Tasmanian Tigers at the Launceston Museum".

Too often, the reported sightings liken the animal to the Tasmanian Tiger, and one wonders if the observers seeing perhaps a wallaby or

IS THERE AN OTWAYS TIGER? (Cont'd.)

a fox in confusing light, may not conclude without sufficient thought, that a "Tiger" is what was seen - not that I doubt for any moment the honesty of the report nor the fact that a "Tasmanian Tiger-like animal" may inhabit the Otways!

Some reports, upon deep investigation fall rather short of convincing, and one such was of a sighting near Benwerrin by three people who saw a spotted Tiger Cat, and a striped Cat; however, the next week they saw in the same area a Tortoise-shell cat, obviously a feral pet, and so the other reports become doubtful.

I have seen a striped cat near home too; late last year, in excellent light, I saw a striped tabby, obviously someone's pet - but given bad light, a much briefer glimpse, an inexperienced observer and a good imagination, and bingo - a Tasmanian Tiger!

I had hoped my writing this may have helped me to sort out my own convictions, but, alas, I am even more confused than ever - and I guess you are too!

But I do accept the possibility, even probability, of an Otways Striped Marsupial-cat, and urge that every possible sighting and report be investigated, and documented by printing in this Journal or elsewhere, or even if only as a report to the G.F.N.C.

* * * * * *

EMUS RETURNED

By Trevor Pescott

Matthew Flinders during that historic walk from the shores of the Bay to the You Yangs peak in 1802 recorded that Emus were seen by his hiking party. Soon after farmers began clearing the land of trees and native vegetation and fences were erected, the Emu became extinct locally, pushed back into more remote areas. In 1970, six young Emus were brought to the You Yangs Forest Park, and by careful tending, the Ranger Mr. John Dixon reared all six in a spacious enclosure; now they have been released and have the freedom of the area.

We hope that this will be a successful and desirable reintroduction of a long-lost species.

THREE AVIAN ODDITIES

By Rolf Baldwin

Although it is only a couple of hours' drive from Geelong, Maryborough seems to be in a different world. The low, rolling ranges of the goldfields country, timbered with straight, pole-like box and rion-bark are like nothing at all that we know in the Geelong district, even in the Brisbane Ranges. However, three items of bird behaviour that were noted near Maryborough are here offered, as the three species concerned are familiar in our country as well.

The first concerns the Common Bronzewing Pigeon (Phaps chalcoptera). Mr. Tony Burger, of Havelock, a retired railwayman, has for some time been working on a new line of fence which runs past a row of sugar gums, interspersed with a few young Monterey pines. After a few days' work he noticed a "bronzie's" nest on a slender forked branch of one of these pines, at about 12 feet from the ground. He watched it unobtrusively, being gratified that this normally very shy bird did not desert the nest on sensing that it had been observed. Moreover, the birds allowed him to continue with his watching until he noticed the next unusual feature, that there were two eggs instead of the far more usual one.* By this time the birds had evidently accepted him as harmless, because they remained faithful to their charge despite the daily comings and goings of this human with his discreetly prying eyes. They even tolerated strangers for, when Tony showed me the nest, the female bird sat fast, brooding over two young ones which were at that time so advanced that their heads, peering curiously over the edge of the nest, were almost replicas of their mother's. That was in late December 1970 and I have had no word of what has happened since.

Another strange facet of bird behaviour was noticed within a chain or two of the home of the twin pigeons. For some years a pair of Galahs (Kakatoe roseicapilla) have used as a nesting site a hollow in an old sugar gum about two feet in diameter. The nest is about twenty-five feet above the ground and thus far all is normal. What attracts one's attention to the tree is the lack of bark on the trunk. During the years of their occupancy the Galahs have been busily ringbarking their tree until now the scar caused by their work, although somewhat irregular in its boundaries, extends about three quarters of the way around the stem in a band about six feet wide. The considerable extent of the current year's work can

(* a local feature - around Geelong, 2 eggs is a normal clutch)

THREE AVIAN ODDITIES (Cont'd.)

be distinguished in the lighter colour of the wood from which the bark has been stripped. In a year or two, if the present rate is maintained, the full ring of bark should be removed and the tree dead from six feet above the ground. The local theory, given without comment for what it is worth, is that the bare wood and, still more, a dead trunk are an effective obstacle to the climbing activities of the goannas which are possibly the worst enemies of nesting Galahs.

The third strange occurrence is also connected with the parrot world. In his bush wanderings Mr. Eric du Bourg, a noted Maryborough ornithologist and bird photographer, found the nest of an Eastern Rosella (Platycerus eximius) and kept it under observation. There was nothing unusual about that; what was unusual was that he soon found that the nest was being tended, not by two Eastern Rosellas, but by a female of that species and a male Crimson Rosella (Platycerus elegans). There were two offspring of this irregular union, almost fully grown just before Christmas, 1970. The larger, probably male, favoured his father, particularly in the obvious cheek patches, whilst the other, a trifle smaller, ran much more to the markings of an Eastern Rosella. Mr. du Bourg's opinion of these goings-on among the parrots is that the union would always be of the type noted in this case, for the male Crimson Rosella has that slight edge in size and power over the Eastern Rosella which would enable him to seize a bride, whilst a male Eastern Rosella would have to gaze hopelessly at the blushing Crimson Rosella that had taken his fancy.

* * * * *

GOATS AT YOU YANGS

By Trevor Pescott

About the middle of last year, two Goats were liberated on the slopes above the Club's tree-planting area of the Top or North Saddle at the You Yangs. The animals were not sighted for some time later in the year, but on January 30th, I checked the area and found three goats, one being a half grown animal obviously the offspring of the other two.

TAKING A CLOSER LOOK AT A HUNTSMAN

By David King

Spiders, although one of the most prevalent of creatures ,have not had anywhere near as much attention paid to them as most other animals. This is possibly because being so common they do not generate a greater interest and, perhaps too, their general appearance and habits tend to inhibit most people's interest to the extent they are considered repulsive. However, once the step is taken to delve further into the form and structure of the spider a whole new world is opened up. The variation in colour and form is vast once these creatures are closely observed with a magnifier, even one of low power.

Of the more widely known spiders and perhaps observed as often as any, at least in Victoria, is the large huntsman, very often referred to, quite erroneously, as a "tarantula". These spiders belong to the family of Sparassidae, and the most common genus seen is the Isopoda. They are characterized mainly by their relatively large size and hairy appearance. The legs, of which there are eight as in all true spiders, are of latrigrade configuration. That is, the surface normally considered to be the upper surface of the leg is, in fact, facing towards the rear giving the spider the appearance of having been flattened or squashed flat with the surface upon which it is resting (Fig.1). Having legs like this enables the spider to move sideways as well as it can forwards, and having a flattened body too, it is able to crawl into crevices and under confined spaces, such as the loose bark of trees. Lifting the bark of dead trees can often disclose one of these spiders.

Although there is no doubt that these spiders can inflict a bite on a human, they much prefer to retreat, or if escape is impossible, to just stand their ground in a threatening attitude without any attempt to attack. The average sized Isopoda has large fangs which can be opened out to easily embrace a pencil. I demonstrated this once by provoking a specimen with a pencil, and although it took a great deal of provocation before it gripped the pencil with its fangs, this grip was sufficient to hold its own weight whilst being shaken. An interesting point was that no venom was evident on the pencil afterwards. Whether this spider is capable of controlling the flow of venom is a matter for further study.

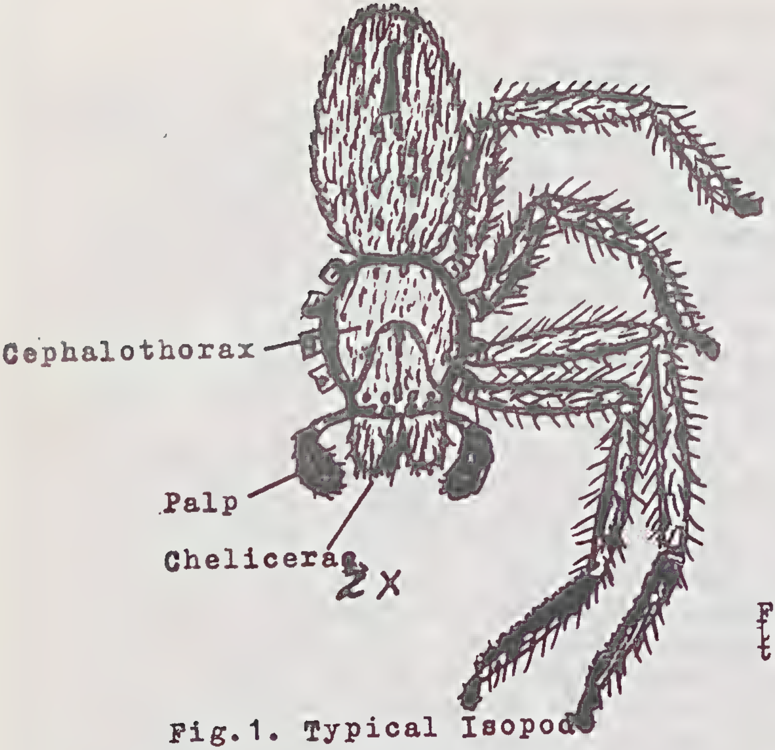


Fig.1. Typical Isopoda

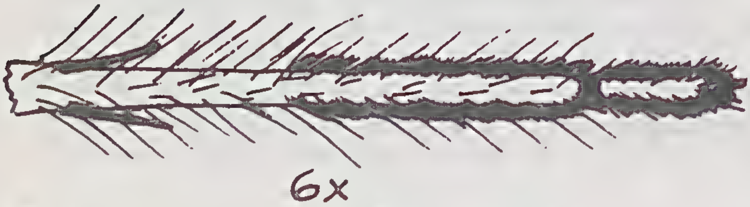


Fig.2. Tarsus and Metatarsus

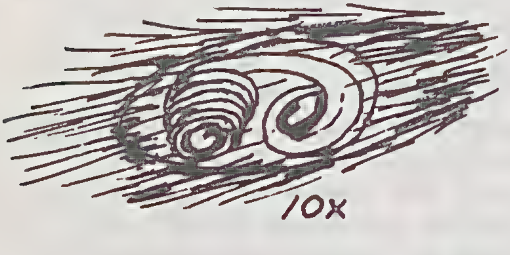


Fig.3. Palp of a male
Isopoda.

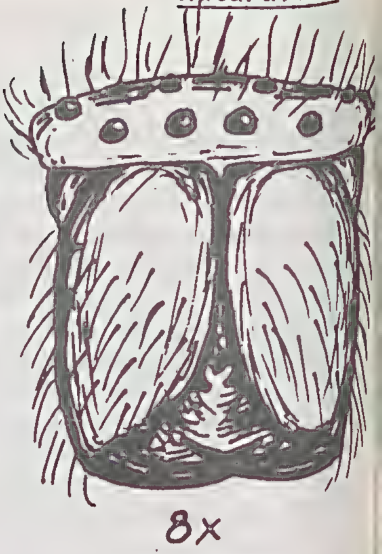


Fig.4. Frontal view of
the face and chelicerae

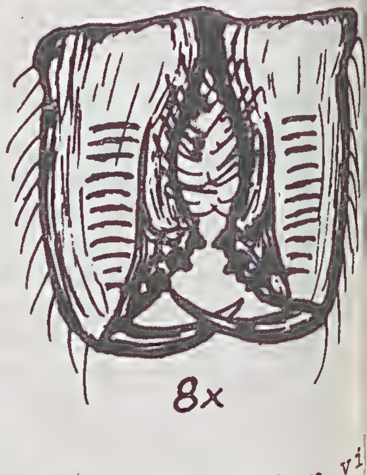


Fig.5. Posterior vi
of the chelicerae.

TAKING A CLOSER LOOK AT A HUNTSMAN (Cont'd.)

These spiders are true hunters because they do not spin a web or a snare to capture their prey. They achieve this by chasing and overwhelming their victim or by suddenly leaping at the victim if it approaches close to the spider. They are, however, equipped with spinnerets that can produce silk and is used for two purposes. One purpose is to produce the egg sac in which it lays its eggs and suitably anchoring same in position under bark. The other purpose is to produce a "life line" enabling it to return to its original position. This is done by the spider first making an anchor pad on the surface upon which it is resting, and then trailing a thread of silk behind it so that it can easily return to the starting point by hauling itself back with the silk thread. This process can be easily observed by placing one of these spiders in a glass jar. It will immediately attempt to produce an anchor pad of silk, followed by several others all interconnected with a silk thread thus forming a network of threads which it can grip with its claws, thereby producing a purchase for itself on the smooth surface of the glass. When the spider is producing the anchor pad the spinnerets can be observed moving rapidly over the surface of the glass, very much like a ball point pen scribbling a small dot.

To assist the Isopoda to move about relatively smooth surfaces the ultimate and penultimate sections of its legs, called the tartsus and metatarsus respectively, have a thick covering of short dark hairs on the under side, similar in appearance to a clothes brush (Fig.2). In addition to the hairs of the metatarsus there are two spines which it is believed play some part in the spider's sound sensory system. Each of the legs terminate in a pair of claws which are sometimes difficult to see because of the fairly dense hair surrounding them.

Attached to the forward part of the spider's head (cephalathorax) are two appendages called palps (Fig.1). The palp is composed of several sections like the legs of a spider and can be manipulated by the spider in the same manner as the legs. In both male and female it is used as a sensory organ, but in the mature male the last section is enlarged and contains the reproductive organs. The palp of a male Isopoda found in the Otways is shown in Feg. 3. The coiled section is the copulatory organ and the base section to which this coil is connected contains the sperm sac. The coil surrounds another part of the organ which is also connected to the

TAKING A CLOSER LOOK AT A HUNTSMAN (Cont'd.)

base section and probably acts as a pump during the mating process. When measured the coil was found to have a length of 2 centimetres.

As previously stated, the palp is also used as a sensory organ. When the spider is closely observed it may be seen to continually touch the ground surface immediately in front of the fangs. An interesting experiment is to feed a live fly or moth to the spider and observe the action of the spider capturing, killing and feeding upon the prey. The spider will grab at the prey with its forward pair of legs and manoeuvre into a position over the prey such that it can insert the fangs and subdue the victim. All during this procedure the palps will be seen to continually tap the prey for the apparent purpose of testing its relative position, and the spider moving the prey or itself into the best position for feeding on the prey. It is quite probable that with the arrangement of the spider's eight eyes, it cannot observe the prey, or anything else, in the region of its fangs and, therefore, must rely on the sensory properties of the palp.

The eye arrangement as shown in Feg. 4 is typical of all the Isopoda. Each eye is fixed and cannot be rotated, but with eight eyes at its disposal the spider must have a wide field of view. One of the anterior median eye lens was removed from a dead Isopoda and placed under a microscope. By adjusting the focus to coincide with the focal point of the eye lens it was possible to see through this lens, objects both close to and at a distance from the lens. By measuring the degree of microscope adjustment between the focal point of the eye lens and the point when the lens itself was in focus, it was found that the eye had a focal length of approximately 1.0 millimetre. It is impossible to say what sort of vision the spider posesses in spite of the eye lens having fairly good optical qualities as it would depend a great deal upon the number and how well developed are the receptors in each retina.

The chelicerae of a typical Isopoda as shown in the anterior view Fig. 4, and posterior view, Fig. 5, consist of two parts, the upper part known as the base section is hinged to the head part such that it can be moved laterally. The lower part is the actual fang which can also be moved laterally relative to the chelicerae. The venom is ducted down from sacs in the cephalathorax through the hollow fang to a minute hole in the end of the fang.

TAKING A CLOSER LOOK AT A HUNTSMAN (Cont'd.)

Two interesting points about the chelicerae, as found in this species, are the horn-like projections and the series of ridges on the posterior surfaces (Fig. 5). It is probable that these projections are an aid to securely gripping the spider's prey whilst it feeds upon it. With the spider's mouth situated immediately behind the chelicerae, coupled with the fact that spiders do not chew their food but suck out the juices from their victim and eject digestive juices to help dissolve more solid matter, it is probable that the ridges on the posterior side of the chelicerae are used to mix the juices and solids in much the same manner the scrubbing board was used by housewives when doing the washing.

Acknowledgement: I am indebted to Mr. M.R. Gray, of the Australian Museum, for information concerning the function of the male palp.

Further Reading: Child, John, "Australian Spiders", Landsdowne Press
Clyne, Densey, "A Guide to Australian Spiders", Thomas Nelson.

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HARGREAVES PADDOCK

By Trevor Pescott

Hargreaves Paddock, part of the once extensive Fyans Swamp, near Princes Bridge is the subject of a project being planned by the Newtown City Council; work will soon be undertaken to enlarge, deepen in part, create islands and extensively plant the area with trees. During the late part of summer, as the swamp has begun to dry out, a wide variety of birds have arrived to feed on the fish, frogs and other aquatic animal life exposed; not the least of these birds have been Pelicans, and on many occasions one or two birds have been present. In addition White ibis, Night herons, White-faced herons, Straw-necked ibis and Yellow-billed spoonbills have been seen there along with Swamphens, Moorhens and Gulls.

All this is an excellent sign that the proposed lake and park will be highly successful.

AT RANDOM

PLUMAGE OF MUDLARK DYED? - by Jack Wheeler.

Late last year, news came from Colac that a strangely plumed Mudlark was seen flying around the city, and at first it was thought to be one of natures freaks. However the bird disappeared and it was later learnt that it had been captured and was being kept in a cage.

The Fisheries and Wildlife were notified and went to Colac to investigate and finally seized the bird, it being a protected species.

The person who had the bird in a cage, stated that he found it on the lawn in a distressed condition and had caged it to nurse it back to health. Another theory was that the bird with such unusual coloured plumage was a real rarity and could be sold to the highest bidder.

However, I have had the opportunity to examine the bird closely and I am convinced that the bird was no freak, but the white feathers had been dyed with a bright purple-cerise coloured dye and whoever had done the job had taken particular care and did it very thoroughly.

The bird was a male, and when I observed it, it was feeding well and appeared quite o.k., but I was surprised that on the following day it was found dead. Had, during preening, some of the dye penetrated its stomach and caused death? This dyeing of the birds feathers was none other than an act of barbarity, and how the person who did the job can receive any satisfaction from such an act is beyond me.

Lack of pigment can on occasions cause albinism and the creature or sometimes a plant, becomes pure white; akin to this, nature can on very rare occasions, produce what we call lutinism, where instead of becoming white, a state of yellowness exists. To inherit lutino,

AT RANDOM (Cont'd.)

it must be from both mother and father even though they themselves may be normal in every way. I have only ever experienced lutinism once and that was at Clunes in 1963, when I observed a pure yellow Red-backed Parrot, and it was on the ground feeding in a flock of at least fifty normally plumed parrots of the same species.

ORCHIDS OF THE CHALK OUTCROPS OF ENGLAND - by Mrs. M. Boardman.

Sixty million years ago, the sea covered the present chalk areas of the south eastern part of England. At the bottom of the sea, as in the Atlantic Ocean today, there was an accumulation of slime, composed of countless armoured carcasses of microscopic animals (foraminifera).

In the course of time, this slime was raised from the ocean bed, and became the Downs of Southern England. The chalk of the Downs was lime dissolved in the Cretaceous Sea, and today consists mainly of calcium salt. It is soft, extremely porous, and the soil derived from it is shallow, quickly drying, with high calcium carbonate content.

Some very rare flowers are found in this chalk country, including some unusual orchids, such as the pyramidal (having a pyramid of mauve flowers clustered on the top of a long stem), the lizard orchid (with a fantastic 2" long twisted lip), the man orchid (with human shaped arms and legs). The latter is found in large numbers in Kent during May and June. They are greenish brown in colour.

There are many others, including the bee orchid, with beautiful pink sepals and rich brown lip, the rare wasp which has a narrower lip than the bee, the fairly rare fly, with green sepals and narrow lip, and two spider orchids.

One spider has green sepals and flowers in April, the other is pink, is found in Kent, where it flowers in May, and is one of the rarest of British orchids.

The loveliest is the burnt-tipped or dwarf orchid. This has reddish-brown sepals forming a dark helmet over each honey-scented flower. It is found on the limestone hills from Northumberland and Cumberland

AT RANDOM (Cont'd.)

down to the south, and when the topmost flowers are in bud, the whole spike looks as if it had been scorched at the tip.

Incidentally, there are over fifty species of orchids in Britain.

(All of this information is from "Wild flowers of the Chalk" by John Gilmore. The last sentence is from "Wild flowers" by Raray.)

THE CONIFERS OF BRITAIN - by Mrs. M. Boardman.

There are only three native conifers in Britain -the Scots Pine, the Common Juniper and the Yew.

The Common Yew is found mainly on the chalk areas, some being reputed to be one thousand years old; its hard springy wood was formerly used for making bows. It is densely branched, thick trunked, grows to 60 feet, and has narrow soft dark green leaves about 1" long. In autumn the seeds are hard and dark red, sometimes causing cattle poisoning.

The Common Juniper grows on chalk and limestone hills, is slow growing and rarely exceeds 30 feet in height. It has narrow, spreading, 1/2 inch long pointed leaves. The globular bluish green cones are fleshy when ripe, and contain 1 to 3 seeds. Oil of juniper is extracted from the unripe cones, which are also used for flavouring gin. There are many varieties of juniper.

The Scots Pine is found also in Europe and Northern Asia. The young trees are pyramidal with the branches circling around the stem; the old trees are almost flat at the top. The narrow, pointed, bluish green leaves are from 2 to 3 inches long, and are in pairs at the tips of short dwarf shoots. The pendulous woody cones are from 2 to 3 inches long, and open in June to release the winged seeds. There are well over 100 varieties of these pines.

The Scots Pine is of economic importance as a source of yellow deal, which is light and durable and often used in house building, furniture construction and for telegraph poles and railway sleepers.

(Information from "A guide to the trees of Great Britain" published by Paul Hamlyn of London in 1966.)

JUNIOR PAGES

POTOROO:

Australia is well known for its larger Kangaroos, in particular the big Red of the inland; the Kangaroo along with the Emu, support our Coat-of-Arms, and Kangaroos were amongst the first Australian animals to be noticed by Captain Cook and other explorers 200 years ago.

But few people know of the little cousin of the Kangaroo, an animal not as large as a rabbit but which is a type of Kangaroo; we use the name Potoroo now, although it was once known as the Rat-kangaroo.

Like the big Kangaroos, the Potoroo is a marsupial, that is the mother carries her young in a pouch until it is old enough to look after itself.

We find Potoroos in several bushland areas not far from Geelong; at Airey's Inlet, near Cobden, at Forrest and in other parts of the Otways, they have been seen.

Potoroos feed on roots, grasses and other plant growth, and during the day sleep in a nest of grass built under a dense bush or grass-tree; in the evening or at night, they come out to feed.

It is most unlikely that you will see them, for they are very shy and being quick and quiet, are hard to find.

JUNIOR PAGES (Cont'd.)

KANGAROO:

Whilst a Potoroo isquite small, the Grey Kangaroo is one of our largest mammals; and far from being quiet, it is quite easy to hear a Kangaroo when it is jumping away through the bush.

Many of us have been down to Anglesea where Grey Kangaroos come out to feed on the fresh green grass at the Golf Course.

Here, we can get quite close to them, for they have learnt that human beings are not going to harm them.

Have you noticed how a Kangaroo walks using its front legs with its tail for support?

This is when it is feeding, and should you disturb it, the Kangaroo hops away on its back legs, and then uses the large, heavy tail to help it keep its balance.

Kangaroos, Wallabies, Pademelons and Potoroos are all known as Macropods - that is a word which means "big feet"; I think that is quite a good name, don't you?

OFFICE-BEARERS 1970-71

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Mr. J. Wheeler, 19 Roslyn Road, Belmont. 3216.
(Phone: 43.3441)

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Mr. J. Hunt, "Stone Chimney", Paraparap.
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(Phone: 43.3441)

Committee:
Mr. R. Baldwin, Geelong Grammar School, Corio.
(Phone: 7.9206)
Mrs. B. Quirk, 36 Fairview Avenue, Newtown. 3220.
(Phone: 21.1229)
Mr. G. Carr, 19 Highview Parade, Hamlyn Heights. 3218.
(Phone: 7.2218)

Published by

THE GEELONG FIELD NATURALISTS CLUB

Geelong, Victoria

The G.F.N.C. meets on the first Tuesday in the month, at 8 p.m. in the McPhillimy Hall, St. George's Church, Latrobe Terrace, Geelong

Visitors Welcome

All papers submitted for publication in this journal should be sent to the Hon. Editor

Ken Jenkin Print Geelong 99358

GEELONG FIELD NATURALISTS CLUB

THE FIRST TEN YEARS

HISTORY OF EVENTS

1961—1971

NATIONAL HERBARIUM
LIBRARY
ROYAL BOTANIC GARDENS.
STH. YARRA, S.E.1. VIC

JUN 1971

Supplement to Geelong Naturalist
Vol. 7. No. 4. FEBRUARY, 1971

— CLUB PRESIDENTS —

Trevor Pescott
Foundation President
1961—1964

Jack Wheeler
President
1964—1971

IMPORTANT EVENTS

SPANNING 10 YEARS

April 1961: Inaugural Meeting. Reformed Presbyterian Church, Fenwick Street, Geelong.

Committee Elected -

President	Mr. Trevor Pescott
Vice-Presidents	Mr. Eric Bound Mr. Jack Wheeler
Hon. Secretary	Miss Voi Boardman
Hon. Asst. Secty-Treasurer	Mr. Duncan Mackenzie
Committee	Mr. Stan Rowe Mr. E.J.R. Taylor Mr. Ralph Boddy Mr. Gerry Farey Mr. Cliff Tingate

First guest speaker - Mr. John Landy.

(Of this original Committee, only two have served throughout, Mr. Trevor Pescott and Mr. Jack Wheeler.)

Subscriptions -

Ordinary Member	£1. 0.0
Joint Member	£1.10.0
Juniors	10.0

First Committee meeting held Mr. Duncan Mackenzie's residence.

May 1961: First Excursion to Cuthbertson's, Ocean Grove - now Ocean Grove Nature Reserve.

June 1961: Meetings changed to first Tuesday in month. Afiliation with F.N.C.V.

September 1961: First tree-planting. Serendip - 250 trees.

October 1961: Committee Meetings - Methodist Church Hall, Herne Hill. First equipment purchased - a book-case. First Auditor appointed - Mr. Johns.

April 1962: First Annual Meeting. Credit balance - £57.11.1.

July 1962: Trade Fair exhibit - great success. Tree planting You Yangs (B.O.C.).

December 1962: Support pledged for Cuthbertson's bushland. First Junior projects: Prizes - Ian Sandwith, Neil Sandwith.

March 1963: First financial assistance - donation £25 to Cutherbertson's appeal. First excursion sheet produced. Excursion - Queenscliff (Miss Banks).
August 1963: Junior prize - Master Geoff Carr.
October 1963: Letter of protest to Geelong Football Club re shooting of hawk.
November 1963: First organised boneseed pulling by hand.
December 1963: Projector purchased.
April 1964: Geelong Naturalist published. Committee meeting transferred to Miss Boardman's flat, Latrobe Tce.
June 1964: Club badge available (250). Designed by Mr. Atkin (GTV9).
September 1964: Survey planned Edwards Point-St. Leonards. (now Wildlife Refuge.)
October 1964: First pamphlet printed - How to plant Sturt's Desert Pea.
November 1964: Cutherbertson's finalised. (Now Ocean Grove Nature Reserve.)
February 1965: Junior leaflet inserted with Geelong Naturalist.
May 1965: Club presented with 'meeting bell' by Mr. & Mrs. G. Layland. Library books all catalogued. First excursion casualty, Mr. Owen Andrews breaks hip - Cumberland River.
June 1965: Cash donation £5 to National Parks Authority for survey of Victoria. Search for 2 lost members Modewarre Excursion.
July 1965: Scout Fair display.
August 1965: Club talk Queenscliff S.S. Education Week.
September 1965: Treatment for oil covered grebes and penguins Corio Bay.
October 1965: First weekend outing - Rocklands, Balmoral. Marked success.
November 1965: Club organised C.E.G.S. students boneseed pulling Batesford and You Yangs.
December 1965: Members "cup and saucer" night. 65 donated. Library card recording.
March 1966: Bird cage for club use for injured birds - Mr. & Mrs. Layland.
May 1966: Three representatives on Committee of Management, Ocean Grove Nature Reserve.

July 1966: First "extraordinary" meeting. Hon. Secretary resigns to get married. Mr. Gordon McCarthy appointed Acting Hon. Secretary. Committee meetings transferred to Committee members homes.

July 1966: First tree planting Top-saddle, You Yangs (500).

August 1966: Public address amplifier in use at meeting.

October 1966: Juniors issued with 'Shell' nature books and cards.

December 1966: First "car-stickers" available.

January 1967: Whistle used for first time to call members on outings.

March 1967: First bus trip - Healesville Sanctuary (2 full buses).

April 1967: Display at Scout Hobbies Exhibition.

May 1967: Afiliation with Western Victorian Field Naturalists Clubs Association.

October 1967: Combined Nature Show with S.G.A.P. (Attendance 2656) Financial success.

November 1967: Club host to Skipton Bird Club and Leopold junior F.N.C. at Lilydale House, Batesford. First interest Hargreaves Paddock.

January 1968: Members interest in bird banding by visiting Lawrence Rocks, Lady Julia Percy Island and Mud Islands.

February 1968: Present meeting hall inadequate, search for larger meeting place. Excursion Airey's Inlet. Junior member Wendy Jennings rescued from surf. Former Secretary breaks leg whilst skiing in Switzerland.

March 1968: Donation $20.00 sent to Lowan Sanctuary, Kiata, for hungry drought effected birds.

April 1968: Meeting transferred to McPhillimy Hall Latrobe Tce. Buses wrongly directed Lal Lal Excursion - Crisis averted.

May 1968: Kindergarten room McPhillimy Hall booked for junior lectures. Mr. Wheeler elected Chairman and Mr. T. Pescott Secretary of Ocean Grove Nature Reserve. Mini (5 min.) lectures introduced. Deputation to Ballarat Shire Council to preserve Flax mill swamp.

July 1968: Represented at opening new school at Marcus Hill. Presentation made.

September 1968: Rare Brydes whale stranded near C.E.G.S. Corio. Support for Little Desert and Lower Glenelg National Park.

January 1969: Mr. John Hunt appointed delegate to W.D.F.N.C.A. Foundation member Roy Wheeler received M.B.E. Local members formed two teams for "Challenge Bird Count".

February 1969:	Young gannet rescued from sea, spent weekend Trentham but later returned to rookery wedge-light one mile east Queenscliff.
April 1969:	Donation towards Gould Print being available for F. & W.L. new laboratories. Annual Report printed separate pamphlet.
June 1969:	Working-bee Anglesea roadside reserve.
July 1969:	Lecture to 16 Cub masters - Eurmerella Scout Camp. Lecture Heylesbury College boys, Anglesea.
August 1969:	Objection to alienation Nerrin Nerrin Swamp.
September 1969:	Display Freshwater Creek Hall.
October 1969:	Orphan emu chick cared for by Mrs. Lesley Rowe (Portland Excursion). Deputation Forest Comm. ref. Bannockburn Nature Reserve.
January 1970:	New public address unit (indoor and outdoor use) purchased.
February 1970:	Large traps made by Mr. Pescott snr. for setting at Carlyle River area for tiger-like animal reported. No luck.
March 1970:	Further 100 club badges obtained. Club inspection Barwon River. Norlane Hobbies Exhibition.
April 1970:	Club effort mutton-bird banding Port Fairy. (1357 birds banded) Mr. Trevor Pescott appointed to Council of National Parks Association. Carrying case purchased for Treasurer. Survey Inverleigh Common commenced.
June 1970:	Representation Mt. Buninyong conservation. Projector stand purchased.
November 1970:	Study Group Anglesea. Survey Mt. Cole near Beaufort.

This report only covers a few of the many activities of this very active club, and my congratulations and thanks to all who have served in some way to make it the success it is - may the next ten years be equally served, as the 1961-1971 period, and may the G.F.N.C. go on to greater achievements in the protection and conservation of not only our fauna and flora, but particularly habitat so important for survival of our natural heritage.

J.R. Wheeler, President.

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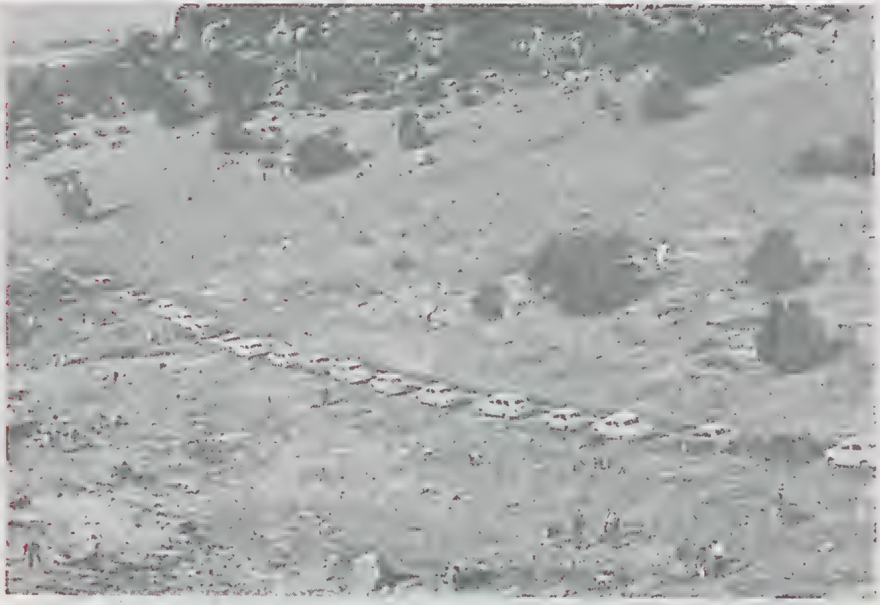
Brisbane Ranges October 1962

Gellibrand Aboriginal Grind-Stone 1966

First Exhibit Trade Fair, July 1962



First Tree Planting, Top Saddle You Yangs July 1966

Membership 1971:	Ordinary Member	195
	Joint Members (102)	204
	Junior/Student - Girls	23
	Boys	43
	Total	465.
	Subscribers to Geelong Naturalist	99
	Mailing List - Excursion/News sheet	64
	Geelong Naturalist	462
	Total	526

Guest Speakers 77.
Meeting attendance 1970/71: 1287 (average 117).
Excursions per cars 89 - per buses 12. (Total buses 31; passengers 1141; miles 1790.)
Weekend trips 10. (Rocklands, Halls Gap, Wilson's Promontory, Mt. Macedon (2), Marysville, Portland, Port Fairy, Hepburn Springs and Mt. Baw Baw.)

Geelong Field Naturalists Club Foundation Members (joining in 1961) who are still members of this Club in 1971:

Agar Dr. & Mrs. John.
Anderson Mr. & Mrs. W.
Baldwin Mr. Rolf.
Banks Miss Joan
Bechervaise Mr. & Mrs. John.
Birdsey Mr. & Mrs. R.D.
Boardman Cr. & Mrs. H.A.
Bound Mr. & Mrs Eric.
Braybrook Mr. Laurie.
Brunton Mr. R.
Carr Mr. Geoff.
Chapman Mr. Arthur.
Dunt Mr. & Mrs. N.
Elms Mr. & Mrs. Les.
Farey Mr. Gerry.
Freeman Miss M.B.
Frizon Miss D.L.
Gayner Mr. Geoff.
Goding Mr. A.
Hunt Mr. & Mrs. John.
Higgins Mr. & Mrs. G.
Hill Miss L.
Jeffery Mr. P.
Jones Mrs. W.G.
Kernot Miss B.
Layland Mrs. G.
Mathison Mr. Geoff.
McCarthy Mr. Gordon.
Mackenzie Mr. Rob.
Pescott Miss Gwen.
Pescott Mr. & Mrs. H.B.
Pescott Mr. & Mrs. Trevor.
Poole Miss Frances.
Rowe Mrs. Lesley (nee Taylor)
Rowe Mr. Stan.
Smith Mr. W.
Tingate Mr. Cliff.
Vincent Mr. & Mrs. Les.
Ward Miss J.
Wheeler Mr. & Mrs. Jack.
Wheeler Mr. Roy (M.B.E.)
Whitmore Mr. & Mrs. John.
Williams Mrs. Voi (nee Boardman)
Wood Mrs. Daisy
Woodland Mr. Ian.

GEELONG NATURALIST

In February 1964, the Committee of the G.F.N.C. considered and agreed to the publishing of a quarterly magazine to provide an outlet for the writings, observations and notes of members of the club; titled "Geelong Naturalist" to distinguish it, however finely, by name from the previous publication that ceased about 1933 - "The Geelong Naturalist" - its first issue came in April of 1964, when the Club membership approached 200.

The Honorary Editor was Mr. Duncan Mackenzie, and he collected together material for 24 pages; the contents read as follows:

Editorial
Annual Report
Three Tails - By Duncan Mackenzie
Shark Attacks - By Duncan Mackenzie
Treasurer's Statement
Devotion to an Injured Swift - By Jack Wheeler
The Wanderer Butterfly - By Trevor Pescott
A Rare Plant at Lal Lal - By Jack Wheeler
Wedge Tailed Eagle - By Duncan Mackenzie
Historical Iron Mine at Lal Lal - By Jack Wheeler
Proposed Bellarine National Park - By Jack Wheeler
Greenhoods - By Voi Boardman
At Random
Junior Section

The only photograph used was on the cover, and depicted a Wanderer Butterfly emerging from its chrysalis; 300 copies of this first issue were printed.

The next issue in July featured 40 pages, and included 3 pages of photographs and sketches, 500 copies of this issue were printed.

Present printings are in excess of 520, and this supplement is attached to Volume 7 No.4 of "Geelong Naturalist" - our 28th issue.

Mr. Mackenzie remained Editor for 3 issues only, until he moved away from Geelong; Mr. Trevor Pescott, the present Editor, took over from him.

For those interested in statistics, there have been 896 pages, 150 photographs and sketches excluding covers, and about 300,000 words printed in our seven volumes.

Only one Index has been printed that being for volumes 1 - 4, 1964 - 1968.

The Editor takes this opportunity of thanking all who have assisted him, and we all look forward to an improved printing in the eighth volume.

JUNIORS

The Club has always attempted to foster participation of Junior members, and each year holds a Project competition; the first of these was held in 1962, and winners in this were brothers Ian Sandwith (first prize), and Neil Sandwith (second).

The following year, the project was won by Geoff Carr.

We currently hold Junior meetings on the monthly meeting night, at 7.30p.m., and these are extremely well attended each night; the enthusiasm of the 20 - 30 juniors is most encouraging, and it is hoped that at least some of the juniors will maintain an interest in wildlife to become senior members and ultimately Club leaders.

Junior projects are still an important part of our club programme; entries for the projects close in November and these are judged in time for the awards to be made at the December meeting.

Prizes given for the best entries are generally books on natural history and many of these have been donated by club members.

* * * * *

Members who have served on Committee 1961 - 1971:

Mr. Trevor Pescott: Foundation President 1961; President to 1964. Excursion Secretary 1963; Editor 'Geelong Naturalist' 1965 - 1971.

Mr. Jack Wheeler: Vice-President 1961 - 1964; President 1965 - 1971; Acting Treasurer 1967; Excursion Secretary and Editor Excursion/News Sheet 1964 - 1971.

Mr. Eric Bound: Vice-President 1961.

Miss Voi Boardman (Mrs. John Williams): Hon. Secretary 1961-1966.

Mr. Duncan Mackenzie: Assistant Secretary 1961; Treasurer 1961 - 1965; Editor 'Geelong Naturalist' 1964.

Mr. Stan Rowe: Committee 1961 - 1963; Excursion Secretary 1962 - 1963.

Late Mr. E.J.R. Taylor: Committee 1961 - 1962.

Mr. Ralph Boddy: Committee 1961.

Mr. Gerry Farey: Committee 1961.

Mr. Cliff Tingate: Committee 1961 - 1965; Librarian 1962 - 1965.

Mr. Rolf Baldwin: Committee 1962 - 1971; Vice-President 1963 - 1967; Assist. Librarian 1970 - 1971.

Mr. John Hunt: Committee 1962 - 1971 (Vice-President 1965 - 1971).

Mrs. F. Leigh: Committee 1962.

Mr. Tom Fletcher: Committee 1963 - 1966.

Miss Betty Kernot: Committee 1962 - 1963.

Mr. Gordon McCarthy: Committee 1963 - 1971; Hon. Secretary 1966 - 1971; Projectionist 1970 - 1971.

Mr. Peter Larson: Committee 1963 - 1964.

Mr. Geoff Gayner: Committee 1963 - 1971; Librarian 1966 - 1971.

Mr. Ian Woodland: Committee 1964 - 1971; Treasurer 1965 - 1966; Assistant Librarian 1969 - 1971; Projectionist 1970 - 1971.

Mr. Owen Andrews: Committee 1965 - 1969; Acting Treasurer 1967; Projectionist 1967 - 1969.

Mr. Jack Whitmore: Committee 1965 - 1971; Librarian 1966 - 1971; Vice-President 1968 - 1971.

Miss Joan Banks: Committee 1966 - 1967.

Miss Frances Poole: Committee 1966 - 1971; Asst. Librarian 1968 - 1971; Bus Tours Secretary 1970 - 1971.

Mr. Ted Errey: Committee 1967 - 1971; Treasurer 1968 - 1971.

Mrs. Betty Quirk: Committee 1968 - 1971; Asst. Treasurer 1970 - 1971; Recorder of specimens 1969 - 1971.

Mr. Geoff Carr: Committee 1970 - 1971; Asst. Librarian 1970-71.

Nature Show October 1967

Nature Show October 1967

First Weekender, Rocklands October 1965

Excursion to Aireys Inlet Feb 1968

TASK OF THE SEVENTIES

The tenth anniversary of any organisation such as this is a time for looking back and reminiscing, taking stock of its achievements and considering the impact it has had on the community around it. It will not be disputed that the Geelong Field Naturalists Club has made a considerable contribution to the causes of conservation and education in the greater Geelong area. The Club can look back with pride over the years of work and service to the community.

But of course, this is not enough. Our prime object at this time is to formulate plans for a fuller participation in projects of conservation so vitally important to our unique area. There is a greatly increased awareness of the need to preserve what remains of our natural heritage and we must all join in wholeheartedly and unselfishly, programs of planning and field work in an endeavour to retain that which still remains.

I recall with pleasure the first years of the Geelong Field Naturalists Club - the active interest shown by so many people of such varying ages and from all sections of the community. I recall too, the many and varied lectures of such high calibre and interest. However, the most inspiring fact of the clubs' activities has been the fine example set by those few members well known to us all who have worked untiringly behind the scenes throughout the past ten years. Their work has been unending - weekend after weekend, month after month, year after year. To those gentlemen we offer our sincerest thanks and the thanks of the generations to come who will know the results of their work.

As we embark on the next decade, we must keep before us the aims of our society and strive harder as our tasks become more difficult in this age of commercialisation. The world is slowly realizing the deadly consequences of mans unbridled intereference with his environment and it evolves upon societies such as ours, to continue the drive both practically in the field and increasingly through our public relations, to awaken a sense of responsibility in the general public. From our study of ecology we are well equipped to speak out against the threats to all life that are increasing daily.

This is the task of the seventies.

Voi Williams, Ballarat.

BEFORE FORMATION

The first suggestion that there should be a Field Naturalists Club in Geelong was made by Trevor Pescott in his Nature Notes column 'By Field and Lane' in the Geelong Advertiser on December 15th, 1960.

A follow-up note in Town and Country in the Geelong Advertiser (February 10th 1961) reported a gratifying amount of interest in the suggestion, whilst 'By Field and Lane' March 30th reported that the Inaugural meeting would be held at the Reformed Presbyterian Church Hall in Fenwick Street on Tuesday, April 11th.

It was on that night the Club came into being.

Between December 15th and April 11th a number of meetings were held; at the first one, held at 114 Nicholas Street Newtown, five naturalists discussed the future of such a venture.

These five were Mrs. Daisy Wood
Miss Voi Boardman
Mr. Gerry Farey
Mr. Ralph Boddy
and Mr. Trevor Pescott.
(The latter four became members of the first Committee.)

But many other naturalists became involved in the early stages of the Club, before and after inauguration, and the various meetings following the first discussions were attended by other prospective members.

It was generally agreed by the pre-committee that if we had 30 people - (could it even reach 50?) - at the inaugural meeting, we would be astonished.

We were astounded when our Hall was packed with something over 90. Most of these joined there and then!

*   *   *   *   *

IMPORTANT STEPS

One of the clubs first ambitious projects was the arranging of a natural history exhibition at the 1962 Geelong Trade Fair.

This proved most successful as was shown by the large numbers of the visiting public it attracted. The second venture of this kind was the 1967 Nature Show held in the Davidson Hall, in conjunction with the S.G.A.P. This also proved particularly successful, running for two days.

On Friday October 6th, 971 children from schools, and 240 casual children attended, along with 210 adults. On the Saturday 554 children and 681 adults passed through the doors. Takings amounted to $409.16, plus sales of publications. After expenses $325 was shared by the G.F.N.C. and the S.G.A.P.

Another important step in the Club's history was the development of a badge. This represented the Small Ant Blue Butterfly, and was chosen from several other proposals because of its association with an area close to Geelong, "The Ocean Grove Nature Reserve". This is the only known area in Victoria where this remarkable butterfly can be found. It was first recorded here by Waterhouse in 1912. It is remarkable because of its association with a small species of ant (Iridomyrmex nitidus). The larvae live within the ant's nest, and apparently the ants feed the larvae, possibly in return for some secretion from the larvae.

The badge was designed by Mr. Atkin of Ballarat. It was first made available to members at a cost of 5/- in June 1964. The original order was for 250 badges at a cost of £52.10.5.

* * * * *

BADGE, SURVEYS & SYMPOSIUMS

The first President, Mr. Pescott, remembers one argument he lost ..... and in retrospect agrees it was a fortunate loss! He writes-

"We had decided an emblem was needed, and suggestions were called for; various ones were made, and the Committee of the time selected two from a number to present to the General Meeting early in 1964.

"The two suggestions made were - Small Ant-blue Butterfly: a draft design by Duncan Mackenzie. Golden Grevillea: a draft design by myself.

"I lost the vote, and the final design was completed by Mr. Atkin of Ballarat who worked for G.T.V.9.

"Looking back, I would agree it was a very happy choice, showing the wisdom, then as now, of our Club members."

Active field work has always been important, and the present Otways Survey Group, which is open to all club members to participate in, is the third such group within the club.

In May 1962, the Gum Flat Survey Group was formed to study that area, but were ultimately frustrated in their work because the area came into Alcoa's control. Later the Geelong Wildlife Research Group formed, and its work extended to Mud Islands, the Otways and Lady Julia Percy Island.

About 2 years ago, the Otways were again subject to study, and the latest and most successful group came into being.

Since the December meeting each year is rather special, the evening's main item has always been the result of combined efforts of several club members; the last two years have been dual screenings, but prior to that Symposiums, cross-sections of natural history, were undertaken by several club experts. The areas treated in this way were: 1963 Mud Islands, 1964 Brisbane Ranges, 1965 Anglesea, 1966 Otway Ranges, 1968 Valley of the Barwon. (In 1967, Mr. Graham Pizzey was guest speaker.)

GEELONG NATURALIST

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APRIL 1968 - FEBRUARY 1972

Supplement to Vol. 13, No. 2.

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